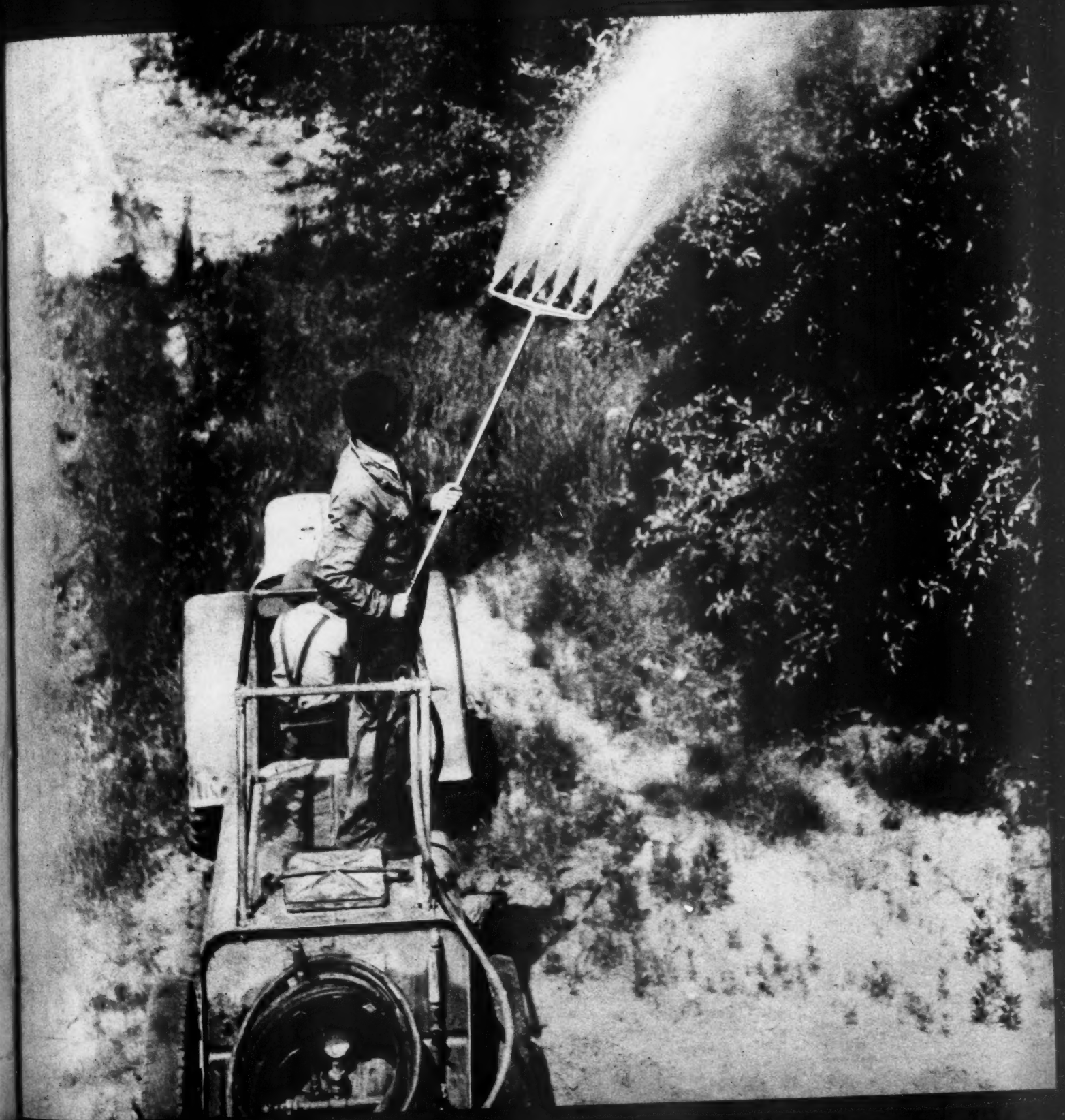


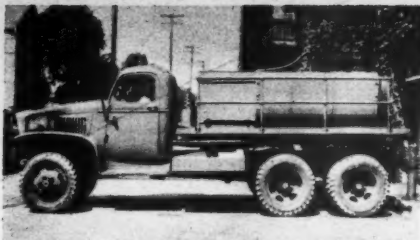
THIS ISSUE 1,000 COPIES

AMERICAN RIT CROWER

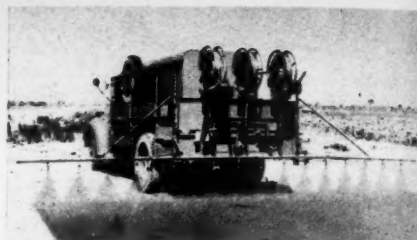




FMC Fog-Drive Fire Fighter extinguishes with high-pressure water fog



FMC Decontaminator for neutralizing poison gases in case of gas attack



FMC Camouflage Machine for camouflaging air fields, buildings, etc.

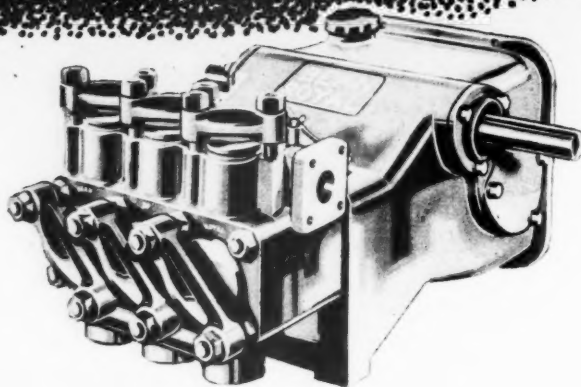
The "BEAN" SPRAY PUMP Has Gone to War!

**Taking good care
of your old Sprayer,
too ...**

WHILE production of wartime equipment means fewer new Sprayers this year, we're doing everything possible to help you keep your BEAN rolling for Victory!

Authorized BEAN dealers in every growing section are ready with parts, repairs and BEAN experience to give you prompt service when it's needed.

NOW, MORE THAN EVER, you will appreciate the simple, rugged, get-at-able BEAN design, the ease with which it is maintained and the long hard service it delivers with little attention except to start the engine and direct the nozzles.



THE RUGGEDNESS, SIMPLICITY and DEPENDABILITY that has kept the BEAN out in front for over half a century is now built into needed wartime machines: High-Pressure Fog-Drive Fire Fighters, Decontaminators, Camouflage Sprayers, etc. The sturdy BEAN Pump is proving ideal for this heavy-duty, vitally needed equipment.

We are building as many new sprayers and spray pumps as permitted by the U. S. War Production Board. We realize that this will not be as many BEAN Sprayers as will be needed this year for the increased fruit and vegetable production programs. The limited number will be distributed by our regular dealers under the Government farm machinery rationing restrictions. If you must have a new Sprayer, to maintain or increase your production, make your application for a BEAN Sprayer through your County Rationing Board and place your order with your BEAN Dealer.

REMEMBER ... you get downright good service out of the BEAN Royal Pump because we build downright good service into it. Made now, as always, from the finest materials. Equipped throughout with ball and roller bearings, long-wearing eccentrics instead of ordinary cranks, heavy-duty connecting rods, porcelain-lined cylinders, and many other features.

JOHN BEAN MFG. CO. Division of Food Machinery Corporation
15 Hosmer Street, Lansing, Michigan
104 West Julian Street, San Jose, California

BEAN SPRAYERS

KEEP 'EM ROLLING FOR VICTORY PRODUCTION

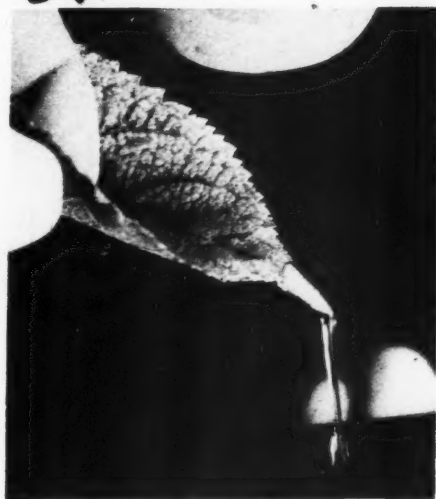
CONSERVE ARSENATE OF LEAD

By MAKING IT DO MORE

*Make every
Pound of Arsenate
of Lead More
Effective*

*Avoid the
Waste of
Uncontrolled
Runoff*

*Control
Codling Moth
with Fewer
Sprays*



The clear water run off shown in the above photograph is PROOF that S-W Spralastic causes Arsenate of Lead to stick to the fruit and foliage in a heavy uniform coating. You can make this test in your own orchard.



Cloudy run off shown in above photograph occurs when time is used with Arsenate of Lead, carrying off a heavy percentage of Arsenate of Lead, leaving the deposit reduced and spotty. You can also prove this in your own orchard.

USE THIS WINNING COMBINATION

SHERWIN-WILLIAMS Arsenate of Lead with S-W SPRALASTIC and S-W SAFE-N-LEAD

To conserve Arsenate of Lead yet obtain the heaviest deposit for control of codling moth, use Sherwin-Williams Arsenate of Lead. It tests 98% pure Arsenate of Lead, which is 2% higher in content than some other Arsenates of Lead. S-W Arsenate of Lead contains not less than 30% arsenious oxide and the least amount of water soluble arsenic, which results in maximum control of codling moth.

For even greater efficiency, use S-W

Spralastic the most efficient spreader and sticker ever developed and make your Arsenate of Lead much more effective in the control of codling moth. Its use actually causes three to four times more Arsenate of Lead to remain on the fruit by increasing the adhesive and spreading properties of the Arsenate of Lead particles and eliminating wasteful run off. Deposits uniform heavy coating of Arsenate of Lead on apples, yet one easily removed in the standard washing process.

Protect apple foliage by using S-W Safe-N-Lead to completely neutralize the water soluble arsenic found in Arsenates of Lead. Added to Arsenate of Lead in the spray tank, S-W Safe-N-Lead converts the water soluble arsenic into a stable compound which will not "burn" apple foliage, but stimulates the growth of healthy green leaves which in turn aid in producing high yields of A-grade apples.

Write for FREE Victory Spray Schedules

For further details on how to make your spray materials go farther, write at once for advice and suggestions on planning a Victory Spray program. Address, Insecticide Department, The Sherwin-Williams Company, Cleveland, Ohio.

**ORDER
SPRAY MATERIALS
EARLY!**
TAKE DELIVERY NOW
TO AVOID DELAYS IN
SHIPPING OR BOTTLENECK
CAUSED BY SPRING RUSH





We Specialize in the WEAPONS to FIGHT PESTS

It has been right in our line—this job of making equipment to control the Master Race, the Super-Doublecrossers and Back-Stabbers.

For many months, we at "Friend" have been devoting most of our efforts to producing the instruments of war—

But we have also tried to meet our responsibilities to the grower, in two ways:

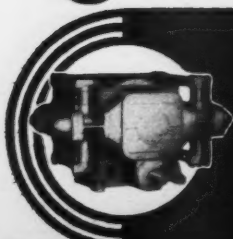
(1) **We have exerted every effort to give the best possible service**, on parts and new machines, in the face of existing restrictions and shortages. This endeavor will be continued, to the best of our ability.

(2) **We have not forgotten that "Friend" users look to us for Leadership in sprayer design.**

Further improvements will be developed by the Engineering Department that has led the way in sprayer progress (see the list of some features originated by "Friend", at the right).

Even in times like these, there must be no suspension of the "Friend" policy of Continuous Improvement.

"Friend" Manufacturing Co., Gasport, N. Y.
SPRAYERS — DUSTERS
FRUIT SIZERS & CLEANERS



Easiest to Maintain
in Working Order--

Fewest Moving Parts

"FRIEND"

It pays to buy your Sprayer from the LEADER

You realize the importance of owning a sprayer that is "up-to-the-minute" in design, in every detail.

It pays to buy from the organization that is not satisfied to follow along in the footsteps of others, but has shown the courage and vision to pioneer, when a new idea means a more efficient machine.

Some of the Sprayer Features ORIGINATED BY "FRIEND"

THE FIRST Completely Lubricated Sprayer—with positive and ample lubrication of all working parts, including the plungers—was built by us more than 30 years ago, and every "Friend" Sprayer built since has had this feature.

THE FIRST 100% anti-friction Sprayer—without a single plain sleeve bearing anywhere on pump or chassis—a "Friend".

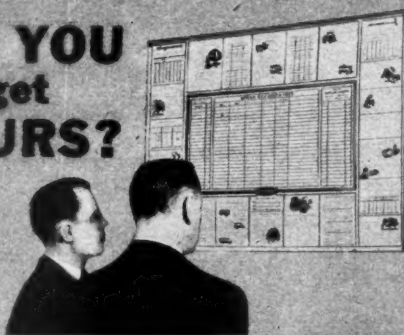
THE FIRST one-piece steel frame for a sprayer, completely welded, without a bolt or rivet to work loose—a "Friend".

THE FIRST flat-top round tank, combining strength with compactness and maximum capacity—a "Friend".

THE FIRST Cutunder sprayer, with front wheels cutting clear under the frame, so that the machine can turn in its own length—a "Friend".

OTHER "FRIEND" FIRSTS: Threadless valve seats, instantly removable for cleaning; Valves and Controller outside where you can get at them; Adjustable Packing with instant take-up, no leaky pumps; Complete Elimination of rubber and leather plunger cups; Complete Elimination of porcelain or other lining for pump cylinders.

Did YOU get YOURS?



The 1943 "Friend" Spray Record Card includes the data you need on spraying pressures, tree coverage, friction loss, nozzle sizes required—a wealth of facts and figures for the Orchardist and his Operator. *Sent free* (use this Coupon).

"FRIEND" MFG. CO., Gasport, N. Y.

☐ Send the new 1943 Spray Record Card.

☐ Send the latest "Friend" Catalog.

Name

Address

(I have.....acres of Kind of fruit



INTENSIVE ORCHARDING IN 1943

AT all fruit meetings throughout the country one question came up for discussion this winter—what procedure should the orchardist follow in an all-out wartime period? It was evident everywhere that orchardists are anxious to do their part both in the production of fruit and the additional production of foodstuffs, as far as practicable. Obviously the program cannot be standardized but certain generalizations may have a wide application.

This is a year when a maximum crop of fruit is needed as never before in the history of our country. The objective in most regions should be the production of large crops of medium-sized apples, that is from 2½" to 2¾" sizes rather than 3 inch size or larger. This will give a more usable, firm, long-keeping product than those of larger sizes.

This means a moderate pruning program which fortunately fits a labor shortage. The removal of "thin wood" with lopping shears will do most of the work and at a minimum of labor and expense. This applies to apples, pears, and to a considerable extent to sour cherries. The peach will require more detail pruning but this, according to Prof. V. R. Gardner of Michigan, might well be postponed until late, that is until blossoming season when one can determine the number of live buds and their location on the tree. This suggestion would apply to the North at least and insure the maximum yield of fruit. Even with the apple, heavy setting varieties could well receive some detail pruning at thinning time to reduce the amount of labor required.

There can be little compromising with the spray program. Thorough and timely applications of sprays is still the best answer. The human element, the man behind the gun, looms large in the picture and is the headache for many, for where is he to be found? However, an aggressive attitude in pest control, equal to that of the men on the firing line, is the only objective for the American orchardist. Strict sanitary measures as described by Dr. Hough in the January issue of *AMERICAN FRUIT GROWER* also plays an important part.

An intensive program should not omit proper fertilization. Judicious use of fertilizers, manures, or adequate mulches is urged for they are still the "poor man's partner."

These measures, together with as wide a diversification in the production of foodstuffs as possible, is our aim and goal. The American orchardist will measure up to his responsibility.

FOR VICTORY



BUY UNITED STATES WAR BONDS AND STAMPS

"MY COUNTRY, 'TIS OF THEE"

A LIBERALIZATION of draft deferment for essential farm workers has been announced by Selective service. Under this new ruling a local draft board will be justified, in some cases, in deferring an agricultural worker who produces as little as eight war units of essential products. In the past sixteen units was the standard with, in the case of a worker on a fruit farm, an acre of apples making up one unit of the sixteen which was required to provide exemption of one man from military service.

The War Man-power Commission states, however, that production of sixteen units would remain as a national objective of each farmer although that standard would not be used now in granting deferments.

In addition to the revision of the war unit standards several additions were made to the list of essential products for whose production farmers may be deferred. Crops added to the original list of essential products, published in the January issue of *AMERICAN FRUIT GROWER*, include tobacco, short, staple cotton, wood products, ducks and geese, goats, vegetable seed and honey. In addition the original list of fruits has been made more detailed.

Selective service boards are also being advised that when, in their opinion, an agricultural worker not producing at least eight war units could produce them if employed elsewhere, the board should notify the WMC's employment office and allow 30 days for placement of the worker on another farm.

The new rulings also direct that deferred agricultural workers shall not be reclassified if they move from one agri-

(Continued on page 27)

Cover photograph shows a Bean
sprayer in action.

STATE BY STATE SUMMARY OF 1943 ORCHARD PEST PROBLEMS

Foes Growers Must Defeat In Fight To Aid National Economy

FRUIT growers face four major problems in 1943. (1) Secretary of Agriculture Wickard has put it squarely up to growers to produce maximum amounts of A-grade fruit; (2) short crops are predicted for this year in contrast to last year's heavy production; (3) fruit pests and disease may prove formidable; (4) shortages of spraying equipment and labor.

Although the prevalence of various insects and disease pests next summer cannot be predicted with certainty, it is the patriotic duty of every fruit grower to be prepared to keep them under control. With the nation calling for maximum production of fruit, as a food vital to Victory, with short crops predicted, insect pests and disease must not be allowed to take undue toll.

To obtain an overall view of the pest problem looming up this season, AMERICAN FRUIT GROWER asked entomologists in prominent fruit states to summarize the 1943 fruit pests problems confronting growers in their states. Here are their statements, state by state:

NEW YORK

By DR. J. A. EVANS

Extension Entomologist, New York
State College of Agriculture

THE insecticide supply outlook at the present time appears to be in a favorable position. Briefly, the fruit growers can expect to be able to purchase their normal requirements of most of the common insecticides used for the control of fruit insects.

Regarding needs and allocations of new spray rigs and dusters we are informed by the state War Board that 106 complete sprayers, 40 pumps and 57 power dusters have been allocated to New York. Of course all of these will not go to fruit growers. Considering the large number of orchards operated in the state this may not appear to be too favorable a position, but if growers are able to secure repair parts for rigs now in use we believe every grower in the state should be in a position to apply the pest control programs we recommend.

Although "on paper" the repair parts situation assumes a favorable outlook, actually the picture is not too good. Recently-issued rulings provide for an allotment of repair parts about 30 percent above the volume actually used in the period 1941-1942. Whether or not manufacturers will be able to fill these allotments, if the demand develops, is another matter.

The labor shortage problem in 1942 related more to seasonal labor, such as is used in harvesting, grading and packing, than it did to more or less year 'round experienced help such as is needed in the job of spraying or dusting. In 1943 however, there is a possibility that there may develop a "pinch" with respect to this latter type of labor.

MASSACHUSETTS

By A. I. BOURNE

Research Professor of Entomology,
Massachusetts State College

IN regard to the fruit pest problems as near as we can anticipate them for 1943 apple scab will undoubtedly be a serious problem because of the heavier than usual carry-over during the winter on leaves.

In regard to insect pests, there is little to indicate any material reduction in the numbers of our more common important pests during 1943. There are some reports that aphid eggs are as abundant as last year, so that wherever they became a problem in 1942 precautions should be taken for attack in 1943—especially in the case of the rosy apple aphid.

Indications of a somewhat heavier carry-over of apple maggot may mean that this pest may become more of a problem in 1943.

In view of the late season abundance of white apple leafhoppers there is good reason to suppose that we may encounter a heavier infestation in 1943.

Peaches:

Indications at present are that the low temperatures which have been experienced throughout most sections of the state, coupled with the very severe damage caused by the ice storm particularly in western Massachusetts, will result in a very light crop this season. In some orchards apparently there will be little or no yield. Therefore fruit pest problems will be reduced in direct proportion.

Small fruits:

The carry-over of leaf and fruit diseases is apparently heavier than usual.

WEST VIRGINIA

By EDWIN GOULD

Associate Entomologist, West Virginia
Agricultural Experiment Station

THE big problem in insect control during the coming season will definitely be the serious labor shortage. There is little doubt that many growers will be unable to obtain sufficient labor to make necessary spray applications.

MARYLAND

By C. GRAHAM

Extension Entomologist, State Horticultural Dept., University of Maryland

THE codling moth continues to be a serious problem, and growers should start now to practice supplementary control methods to help offset any inefficiency that may develop in the spray program due to labor and spray machinery shortages.

Some of the supplementary methods that should be practiced are:

1. Scraping the loose bark from the apple trees and placing chemically treated bands around them before June 15.
2. Make packing sheds moth-proof by stopping all cracks and other places of escape with screen wire, cardboard or building paper.
3. Enclose all packing boxes, baskets, and barrels in a moth-proofed building.
4. Remove all props, all recently cut apple trees, or wood one-half mile from the orchard before June 15.
5. Prune the trees in such a manner as to permit the spray man to get under the trees and do a thorough job of spraying.

NORTH CAROLINA

By C. F. SMITH

Assistant Entomologist, North Carolina
State College of Agriculture

THE major insect pests of apples will probably be the codling moth, rosy apple aphid, green apple aphid, San Jose scale and to a limited extent the oyster shell scale. The codling moth usually presents a problem every year, except in the higher mountains of western North Carolina.

Of the peach pests the peach tree borer will probably be the most common and wide spread. The plum curculio and Oriental fruit moth were quite injurious last season and it is possible they will be abundant again this year. The San Jose scale is a problem if the dormant spray is not applied thoroughly. The white peach scale has been increasing in importance the last few years and will probably be of considerable importance again next year.

GEORGIA

By THEO. L. BISSELL

Entomologist, Georgia Agricultural
Experiment Station

PEACH:

Curculio damage was heavy in 1942 and there was a large number of insects to go into hibernation. Brown rot damage is quite variable, being hardest to control when curculios are heavy and the weather is damp.

Oriental fruit moth is only a local problem in central Georgia as most of the crop matures before the worms become abundant. Varieties later than Elberta are usually hard hit by this pest.

Apple:

In apples, grown largely in the northern fourth of the state, codling moth is a very serious problem, requiring 6 or 8 sprays annually to control it.

Pecan:

Scab, a disease attacking the nuts, is the most serious pecan pest in southwestern Georgia where most of the crop is produced.

To do a thorough job of pest control in Georgia would require 1000 additional power sprayers since there are large acreages that have never been adequately protected.

TENNESSEE

By G. M. BENTLEY

State Entomologist and Plant Pathologist, University of Tennessee

THE codling moth has been a pest with our apple growers for the past three years and more than likely will be this coming
(Continued on page 18)



The orchard sprayer is a specialized machine with no satisfactory substitute.

ORCHARD SPRAYERS GO TO WAR

By C. N. TURNER

New York State College of Agriculture

THE orchard sprayer is the most essential piece of equipment which the fruit grower owns. It is a specialized machine with no satisfactory substitute. Disease and insect specialists agree that most fungicides and insecticides are effective when applied correctly and on time. They report that more failures in control are due to the type and use of spray machinery than in the type of spray material.

Sprayer manufacturers have been requested by our government to supply equipment to the armed forces. A sprayer has been found very useful around army camps and for fire protection. Only recently has the high pressure sprayer been recognized as an outstanding piece of fire fighting equipment. Every fruit grower should keep this in mind for his own farm. The above mentioned demand in addition to the fact that sprayers are made of several very critical metals has resulted in the low quotas of new sprayers for our fruit growers.

Due to the low income of fruit growers during the past ten years, there are many old and obsolete sprayers whose inefficient operation will have to continue for another year. These older sprayers are limited to maximum pressures of 350 pounds, resulting in the actual waste of precious spray materials due to large droplets which run off the leaves onto the ground. They give frequent mechanical troubles which cause delays resulting in the waste of a part or all of the materials for that particular ap-

plication. It is practically impossible to keep the older machines from leaking spray material onto the ground. No man can keep these inefficient machines from wasting critical fungicides and insecticides in addition to the loss from the poor quality and damaged fruit so badly needed in our war effort. It has been estimated that one-third of our fruit growers will be forced to use this inefficient equipment in 1943.

In August, 1942 the Farm Machinery Committee of the New York State Extension Wartime Council made a survey through the Extension Minutemen of the needs of farmers for new machinery in 1943. A summary showed that 620 new fruit sprayers would be needed to replace worn out and obsolete equipment. It also showed that 185 new sprayers would be needed in addition to the present equipment on farms. The above needs are agreed to be conservative because over half the reports came from small farmers. In contrast to the need for 800 new fruit sprayers as indicated by the farmers themselves the state quota at present is 141 new sprayers and 53.3 new pumps for the needs of fruit, potato and vegetable growers in the entire state. This represents the picture only as regards the sprayer. Other equipment such as trucks, tractors, plows, harrows, water pumps, the shortage of labor, trans-

portation and packages complicate the situation. Machinery and equipment are the *only* real substitute for labor whether on the farm or in the factory.

It has always been our belief that any piece of farm machinery can be repaired to operate for at least one more season. This assumes, however, that repair parts and welding facilities are available and the machine can be assembled within a few hours. Some sprays must be applied within a period of three or four days. Therefore, unless the grower can get the sprayer back in operation or borrow his neighbor's machine his fruit may be seriously damaged.

Since for the first time in history many growers will be unable to secure new machines if the old one breaks down, it is impossible to estimate what the demands for repair parts will be. The sprayer manufacturers assure us they will do everything in their power to meet the demands. Nevertheless, it takes time to make parts even when the materials and manufacturing facilities are ready to function. It would seem to be impossible to avoid some shortages of certain parts and consequent delays in delivery to the grower.

In view of the many restrictions what can the fruit grower do to help meet the situation?

1. Take a thorough inventory of his new machine and repair part needs for 1943 and place his order with his local dealer.

(Continued on page 25)

CAMERA

AT WORCESTER MEETING OF MASSACHUSETTS FRUIT GROWERS ASSOCIATION

•



Under camera fire, (left) Captain G. N. Barker, R. C. Cobb, R. M. Lingham and Bennett Sanderson, all of Littleton, Mass. For convenience of growers the Association held meetings in three different locations.

Top—Prof. W. R. Cole, Secretary, Massachusetts Fruit Growers' Association, is registered by Mrs. Clara Lewis. Above—Apples are examined by, (left) Dr. J. R. Magness, U. S. D. A., Prof. R. A. Van Meter, who was re-elected President of the Association, George A. Drew, Westford, Mass., and B. S. Chace, Swansea, Mass.

AMERICAN FRUIT GROWER PHOTOGRAPHS

Right—Standing are (left to right) Harold Goldthwaite, Dustable, Mass., and Walter Piper of Mass. Dept. of Agr. Extreme right: Mr. and Mrs. Harold O. Woodward, Dighton, Mass. Below at left: L. B. Nichols, Hanover, Mass., and Chester B. Blodget, Sterling, Mass. Center: J. V. Davad, Storow Farm, Mass., displays apples. Right: W. H. Wyeth, (left) Beverly, Mass. and Alan C. Kimball, Littleton, Mass.



Killer Many Insects

BLACK LEAF 40

Aphids that deform fruit and foliage—leafhoppers that devitalize the leaves—red bugs, bud moths, and similar destructive pests—all these should be controlled before their attack reduces the quality of your crop and the future yields of your orchard.

Black Leaf 40 provides an economical counter-attack—for it can be combined with other standard sprays to add effective protection against these several pests. Use Black Leaf 40 to step-up spray programs.

TOBACCO BY-PRODUCTS & CHEMICAL CORP.

INCORPORATED

LOUISVILLE, KENTUCKY

4143



LOOK FOR THE LEAF
ON THE PACKAGE

**Black
Leaf**



The peach industry has its hopes built upon more home-canning than ever before during the coming season, for it doesn't take many millions of housewives, buying one or two bushels each, to make the peach movement that insures prices with a profit.

THE PEACH GROWER—THIS YEAR

WITH the food situation finally crystallizing in all its potential seriousness, the place of the peach grower in the War line-up has been fixed;—clearly, inescapably.

He produces one of the essential foods for our fighting forces, for our service of supply, our children and home folks. Our War Administration has so classified him officially; has so graded him for equipment and supplies. The grower of essential foods ranks with and after the line trooper (Administrators Wickard, Jeffers, McNutt, et al).

This eases somewhat the path ahead for the peach grower. Government's benediction helps clear the grower's way to obtain supplies, packages, labor and such: "helps clear" his way only, for Government, involved in a mighty war, will not and cannot hand these to the grower. It will still be a struggle to obtain them, with success in proportion to the grower's own ingenuity, judgment, foresight and cooperation with his fellow growers: for a thousand civilian industries, as well as our armed forces and Lend-Lease, also are seeking the limited supplies. But Government's benediction will help, greatly.

The grower's classification "with and after the line soldier" brings him help. But it also places his responsibility, squarely. The soldier who runs away, and the grower who sits down or quits, are in exactly the same class.

There can only be one position for the grower, as an American citizen producing an essential food in this War. Cecil C. Clark, unassuming grower of Wapato, Washington, put it thus:

"Personally, I believe the thing

By **CARROLL R. MILLER**

President, The National Peach Council

for any farmer to do is to plant heavily, plan heavily, and hope he will not be crucified by lack of his share of materials and men. But if crucified, it will not be his fault. I am going to add 100 acres of vegetables to my fruit game this coming year. The past season the Clark Ranch enjoyed a good year. All crops were good, paid well and we got everything off. We paid high wages, which was okay, and I feel will be okay this coming year. . . . I regret this sit-down feeling among farmers. It may be warranted but it is dangerous."

Many growers were in honest doubt, until the Administration's recent classification of foods, in which most major tree fruits are "essential." These growers felt that they might better serve their nation by locking their orchard gates and going into munitions plants, or into the armed forces to help with the actual battle. We could only tell them then that the peach grower, averaging perhaps 300 bushels to the acre, produces some thirteen thousand pounds of food per acre, as against the average of perhaps 2,000 lbs. per acre by the wheatgrower; and against some 2,500 lbs. per acre by the corn-grower. With peach growers now well up in the "essential" list, this big per-acre tonnage of food becomes more important. For, as The Bible noted centuries ago, "Man cannot live by bread alone." Fruits are equally a diet essential.

So . . . the grower has his marching orders. The Army gives the soldier a rifle, ammunition, grenades,

helmet and objective for the attack, but each soldier must figure out for himself his own ways of coping with the enemy or obstacles between him and the objective. Government provides growers of essential foods with priorities and other helps, but the grower has to work out his own ways and means in getting to his objective:—production of the most possible food. We are in for a tough year. Are you quitting? Or will you, like Real Soldier Clark, add something to help the War Effort?

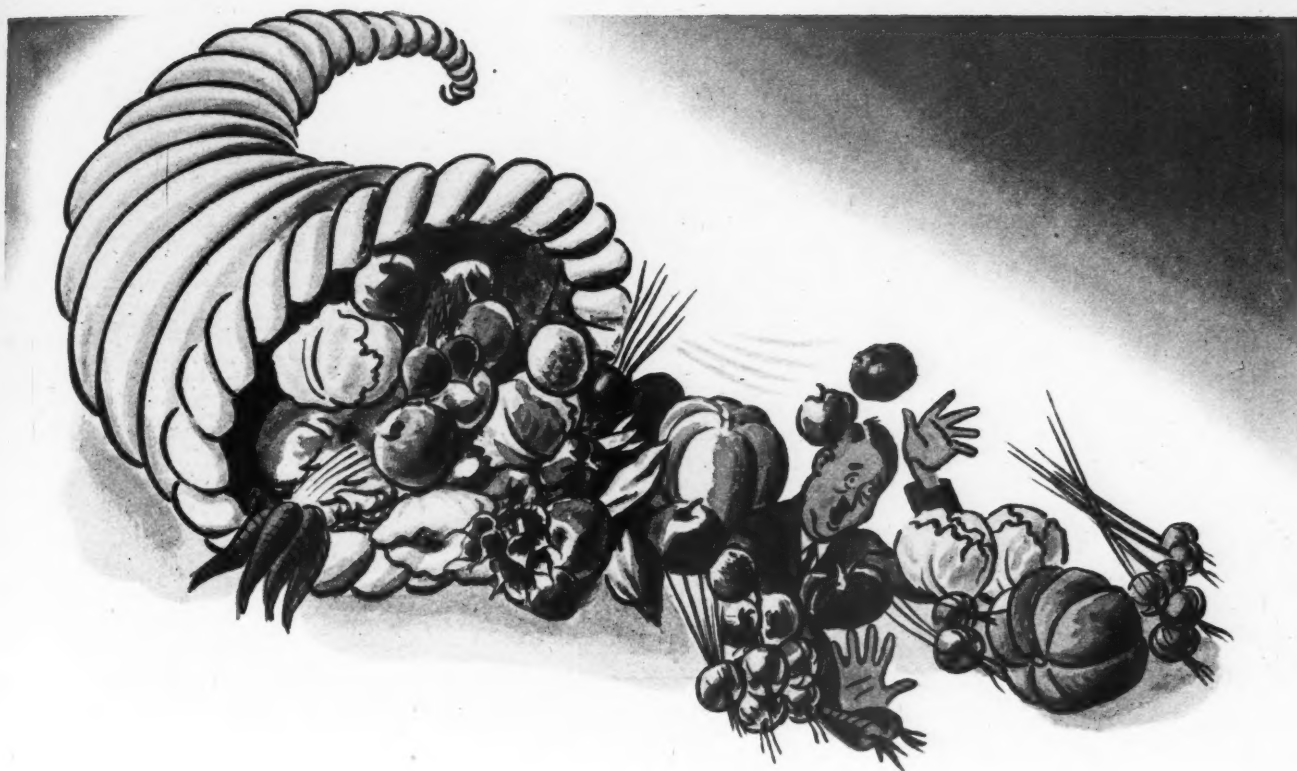
Changes will come fast this year: faster even than last year, beyond doubt. There will be great opportunities, and there will be huge war-made shell-craters into which growers and the Industry may tumble disastrously. It cannot be otherwise with the Nation rushing into worldwide battle.

Extra alertness and sharpened intelligence are as necessary to us as to the fighting man on the line. "Survival of the fittest" is the prime law in all warfare.

Growers generally feel:—"Food is short. Payrolls are record-breaking. Supplies of other purchasables are short. Therefore, peaches will sell excellently. Peach price levels will be high the coming season, and for several seasons thereafter, for even should the War end soon, we have pledged to feed the starving portions of the world back to health."

For peaches, maybe—and maybe not! For apples, yes. But apples have a 40-week market period. Peach crops the past two years have averaged 68¼ million bushels, nationally: and barring catastrophe, should average about that for sometime ahead for young trees are still "com-

(Continued on page 21)



This horn will "Blow-the-man down"

AMERICA'S knowledge of how to grow things has developed vast agricultural resources—resources which in turn develop a stronger and healthier America.

But in these days of world war America must feed not only herself, but the people of other nations as well.

One of the enemies we must arm ourselves

against is pests—insects and plant diseases that cost us 3 billion dollars a year in *waste!*

To help growers reduce crop losses Du Pont is producing every possible pound of insecticides and fungicides. Use these chemicals carefully so everyone can protect his crops—for it may well be that "food will win the war and write the peace."

See This Movie

"GUARDIANS OF PLENTY"

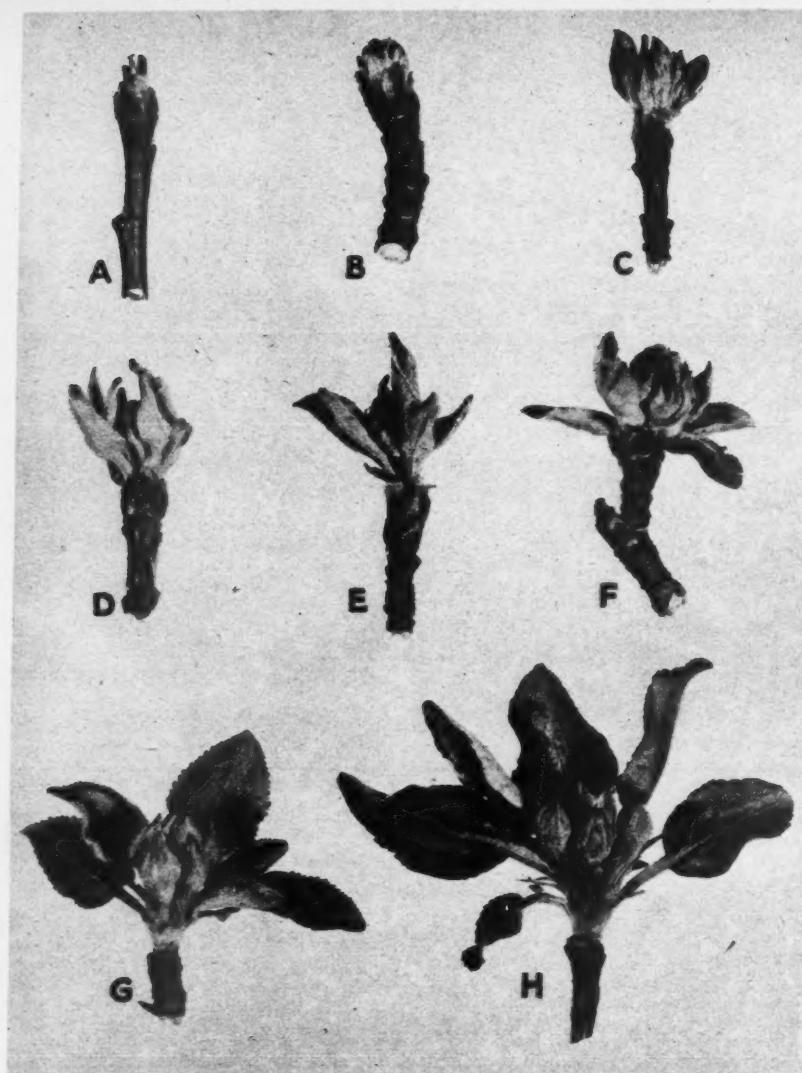
★ ★ ★ ★

Education... and more. The film story of du Pont Pest Control Research in color and sound. A trip through one of the most unusual laboratories of its kind in the world. Write for descriptive folder. 2504 Nemours Building, Wilmington, Del.



INSECTICIDES AND FUNGICIDES

"MONEXFORM Lead Arsenate	Lime Sulfur	Paris Green	"BLACK LEAF" "155"
"BRASSELLI Lead Arsenate	Calcium Arsenate	Copper-A Compound	"FLUENT" Sprayer
"SULFURON Wettable Sulfur	Spray Oil	Fluoride Sulfur Paste	"PARAFONT Parathionemum
"DUTON Fluorine Insecticide	Copper Sulfate	Bordeaux Mixture	Zinc Sulfate—Flake
Spreader-Sticker	Sulfur	"BLACK LEAF" "45"	"PARAFONT Nemous Spray
"LEAD Contact Insecticide			Cryolite (precipitated)
			"Lindmark"



Spray at the right time. The pre-pink spray should be applied between stages C and F. The pink should be started at stage G and completed by the time the first flowers open. (Courtesy of Illinois Agricultural Experiment Station.)

FRUIT CROP DISEASE CONTROL

Use and Abuse of Spray Schedules

By H. W. ANDERSON

Chief in Pomological Pathology, Department of Horticulture, University of Illinois.

FRUIT diseases as well as diseases of other crops are controlled not only by spraying but by a variety of methods, such as selection or breeding of resistant varieties, cultural practices, sanitation, eradication of alternate hosts, and roguing of diseased plants. Spraying is the best known and most generally used method of control for fruit diseases caused by fungi. It is generally ineffective in the control of virus and bacterial diseases and against those fungi which work only on the roots of the plants, such as red stele root rot of strawberries and shoestring root rot of fruit trees.

The grower who wishes to produce good fruit knows that he has to spray. With the exception of some of the small fruits, such as strawberries in favored localities, it is impossible to

produce good crops without spraying several times during the growing season. Unfortunately, most spray chemicals, whether insecticides or fungicides, cause some injury to the plant and if the wrong spray mixture is applied, or if the right material is applied at the wrong time, very serious damage may result. The grower is necessarily dependent upon long years of experimental work by the agricultural experiment stations, the U. S. Department of Agriculture, and the manufacturers of spray materials for information on the type and concentration of the chemical to use and the time of application. For this reason "Spray Schedules" are issued by the experiment stations, which are periodically revised to include the results of recent experimental work.

Spray schedules are basically very important and the inexperienced grower should follow the directions given as closely as he can. On the other hand, spray schedules have many limitations and the experienced grower soon learns that any spray schedule may have to be modified to meet his conditions. Most spray schedules are based on *maximum* rather than *average* control; that is, it is assumed that, in a given locality, *all* important diseases and *all* insects likely to cause injury will be controlled and that conditions will be favorable every season for the maximum development of the parasite. By knowing the relation of weather or variety to a given disease or insect, the experienced grower is able to leave off some sprays or feel safe in diluting his materials, thus reducing his costs.

The fruit grower should also realize that a spray schedule for one state or one section of the country may be of little value in another state or a different fruit area. A schedule for northern Illinois is quite different from that for southern Illinois. A schedule for fruit disease control in California might be of no value whatever to a fruit grower in Virginia.

Fungicides recommended in a spray schedule are selected for this efficiency and lack of injury on the basis of extensive experimental work. But here again many factors enter to plague



Apple blotch on fruit. No sprays for its control are needed in northern areas, since it is confined to the southern fruit belt.

the orchardist. A "mild" sulfur may give excellent control of apple scab in one area, while it will fail miserably in another. Lime sulfur may cause very severe injury in one fruit section, while it may produce no apparent injury in another.

Geographical distribution of diseases also modifies spray schedules. A heavy Bordeaux schedule during the summer may be necessary for the control of bitter rot and blotch of apples in southern Illinois and Indiana but will be useless and probably very harmful for apple orchards in Wisconsin.

(Continued on page 14)



For thousands of years the codling moth has lived on the apple.

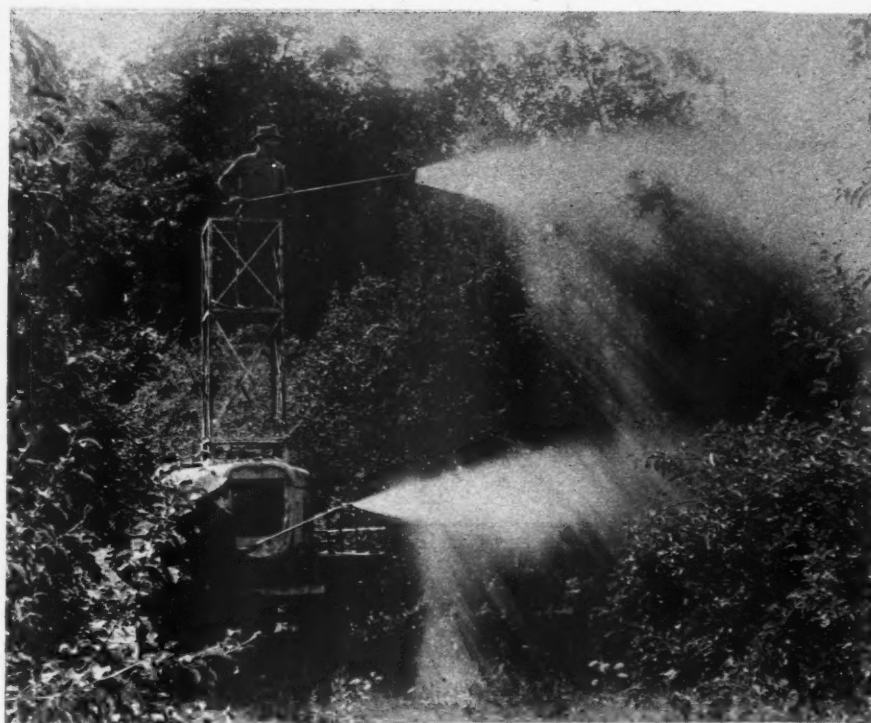
THERE was a time when experimenters could and did demonstrate that one spray of lead arsenate, placed in the calyx cup of the apples, was sufficient to control the codling moth in eastern United States. In the commercial orchard area of Virginia that time was 34 years ago, and up to 1915 the general practice in the Shenandoah Valley was to apply one spray, the calyx application. Now the minimum number of sprays required is four, and many orchardists find that five or six applications are necessary to obtain control that results in grades no better than the control obtained 34 years ago.

The experience of commercial orchardists in Virginia parallels the experience of orchardists in some of the other well-known orchard centers of the country. For example, in the Grand Valley of Colorado many orchardists have removed their apple trees largely because the codling moth became so difficult to control. I quote from a letter received in 1928 from Dr. George M. List of the Colorado Experiment Station: "The first accurate record of the codling moth in the Grand Valley was in 1891 . . . a few growers began to spray about that time but spraying was not general for three or four years. For a number of years only the calyx spray was made. In 1900 and 1901 it was generally recommended that one cover spray be applied in addition to the calyx spray. . . . In 1904 (the calyx and) two cover sprays were quite generally used and a few of the growers were applying a third. During all of this time the percentage of loss was quite low, as compared with present losses. From two per cent to five per cent of wormy fruit was considered a very heavy loss. . . . In 1909, which was the year of my first experience in that section, the general practice was to make five or six applications. By 1914 the infestation continued to increase, and six to seven sprays were used by practically all of the growers. From 1914 to the pres-

RESISTANT STRAINS OF CODLING MOTH

By W. S. HOUGH

Winchester Research Laboratory of the Virginia Agricultural Experiment Station



Spraying to control the codling moth has steadily increased in efficiency but still the insect survives.

ent time (1928) we have had demonstration blocks practically every year. . . . In spite of all of the information we have been able to get and to give the growers, the number of applications has been increasing and the results have not been as good generally as in former years. During the last four or five years the growers have been applying from eight to 10 sprays and as high as 12 is not uncommon."

In 1933 Dr. R. L. Webster of the Washington State Experiment Station presented experimental data obtained at Wenatchee showing the trend in three years toward decreased control of the codling moth larvae with lead arsenate plus oil. In 1939, O. T. Clauson, a fruit grower, reported significant information in the Proceedings of the 35th Annual Meeting of the Washington State Horticultural Association. Immediately following the Federal restrictions on arsenic residues early in 1926, a "careful survey showed that the Okanogan district was averaging 85 pounds of arsenate of lead used in spraying for each car of apples shipped; the Yakima district used 87 pounds, and the Wenatchee district

134 pounds. Eleven years later the Okanogan district used 306 pounds of arsenate of lead and fluorine, the Yakima district 272 pounds, and the Wenatchee district 524 pounds."

Since orchard spraying practices are adjusted to requirements for control, it is apparent that the trend has been toward an increase in the requirements for adequate control of the codling moth in some commercial orchard areas of the country. Experimental tests covering the past 16 years at Winchester, Va., have revealed that one factor contributing to the trend toward increased requirements for codling moth control may be the shift in the nature or composition of the codling moth population in a locality where spraying has been practiced for some time. Sixteen years ago we obtained larvae from the Grand Valley of Colorado and reared them for a number of years (1927-1933) in an insectary where all precautions were taken to prevent their escape. Many comparative tests were made between Virginia and Colorado larvae on apples sprayed with lead arsenate and always the Colorado lar-

(Continued on page 17)

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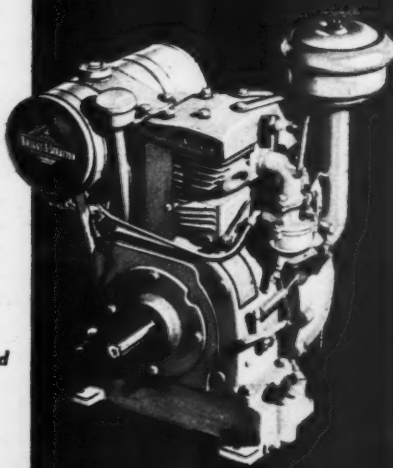
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FRUIT CROP DISEASE CONTROL

(Continued from page 12)

In preparing a spray schedule for any given region, it is necessary to keep in mind all the diseases and insects which might cause trouble in that particular area. Usually, however, comparatively few of these parasites need to be considered, since a fungicide applied for the principal diseases is likely to control most of the secondary diseases, and the same is true of insecticides. Once in awhile, too much attention to a major disease or insect may cause a slip-up in effective control of a forgotten, minor disease. This may be illustrated by an actual case in Illinois peach orchards. Peach scab and curculio are controlled by applications of combined sulfur-lead arsenate-oil dust. Curculio is, of course, the outstanding enemy in this schedule. While curculio infestation was at a low ebb, the growers saved spray materials by dusting only a few rows around the edge of their orchards or left off the curculio dust entirely, forgetting that this dust also contained a fungicide. Conditions unusually favorable for peach scab came along about this time, and as a result there were many scabby peaches in the market that year.

Fungicides have been vastly improved during the past ten years, and much has been learned about methods of application. In spite of numerous tests of hundreds of "new" materials, we are largely dependent upon the two basic elements, *sulfur* and *copper*, for fruit disease control. Nearly all the outstanding advances have been made in learning how to combine or process these two elements to increase their efficiency or to reduce their toxicity to the fruit crops.

Bordeaux mixture, which was the standard spray for fruit crops, was generally used from about 1885 to the early 1900's. From about 1910 to the present, sulfur sprays have been extensively used, with lime sulfur being the favorite in the early part of this period. "Fixed copper" or "insoluble copper" have been extensively used as substitutes for Bordeaux mixture during the past five years, and for certain diseases on some fruit crops these have some advantages over Bordeaux mixture. Most fruit spray schedules are still based on lime sulfur, wettable sulfurs and Bordeaux mixture. The tendency has been to limit the use of lime sulfur because of its injurious effect and to substitute the newer fine-particled or "microfine" wettable sulfurs. There has also been a tendency to reduce the strength of copper in Bordeaux

(Continued on page 16)

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FRUIT CROP DISEASE CONTROL

(Continued from page 14)

mixture. The use of a weak Bordeaux ($\frac{1}{2}$ -1-100) as a lead arsenate safener has been one of the outstanding advances during the past five years.

It is necessary for the fruit grower to understand some general principles in selecting the materials he wishes to use in his schedule.

1. Sulfur sprays should be used on apples only during the early part of the season in areas where the summer temperature frequently goes above a 90° maximum.

2. Lime sulfur is the most efficient sulfur fungicide, but is likely to cause serious injury, which, in some cases, may escape the attention of the grower, for example, reduction in fruit set. Lime sulfur should never be used on peaches as a summer spray.

3. Bordeaux or other copper sprays should be used, when necessary, only during the warm summer months on apples and should never be used on peaches in foliage.

4. Wettable or flotation sulfurs should be used in place of lime sulfur whenever they may be expected to give satisfactory control. In the middle states south of the Wisconsin-Michigan line the microfine wettable sulfurs may be used, starting with the calyx spray on apples, with the expectation of securing adequate control.

5. Oil sprays, such as oil-lead arsenate, should not be used following sulfur sprays until there is no evidence of sulfur on the foliage. Serious foliage injury may result.

6. Adequate control of peach diseases may be secured by the use of either sulfur dusts or wettable sulfur sprays. Oil-sulfur-lead arsenate dusts or oil-sulfur dusts give added protection and cause less injury to the foliage than lead arsenate-sulfur-lime sprays.

7. Zinc sulfate-lime is an excellent safener for lead arsenate in the peach spray program and may be used in the apple spray schedule, but weak copper sulfate-lime (weak Bordeaux) has the added advantage of having some fungicidal value.

8. Thoroughness of application cannot be overemphasized, but this does not mean that large quantities of spray per tree is a substitute for even distribution. Some growers will get better coverage and consequently better control by using ten gallons per tree than other growers who use twenty-five gallons per tree.

With these fundamental principles in mind and a reasonable knowledge of the diseases to be controlled, the fruit grower should be able to modify a standard spray schedule to meet the needs of his particular locality.

It is probable that some of the newer organic spray materials will prove to be acceptable substitutes for sulfur or copper, but in the 1943 season it seems best for the growers to rely largely on the materials which by long years of experience have proved reliable for disease control.

During this war emergency all fruit growers should try to conserve materials which are essential in other war industries. While there may be no great shortage of copper, for example, it is important that the growers use copper-containing sprays only when they are absolutely necessary to secure control.

CODLING MOTH

(Continued from page 13)

vae were much more successful in entering the sprayed fruit. A typical annual average showed the following proportions of live entries: Virginia, two per cent; Colorado, 22 per cent. Similar difference showing the superiority of the more hardy or resistant Colorado larvae was indicated on apples sprayed with non-arsenical insecticides such as nicotine bentonite, cryolite, and rotenone. Colorado eggs near the time of hatching were more resistant to cyanide fumigation than were the Virginia eggs.

We crossed Colorado and Virginia moths and found the hybrid progeny to be intermediate between the parent strains. Backcrossing the hybrids with the Virginia moths tended to produce individuals similar to Virginia larvae in ability to enter sprayed apples, while backcrossing with Colorado moths yielded individuals approaching the Colorado strain in ability to enter the apples.

In 1929 we began to rear some Virginia larvae on apples sprayed with lead arsenate. The original larvae used in this work came from an old home orchard consisting of a few trees which had never been sprayed. This orchard was isolated from the commercial orchard area. All generations from 1929 to 1942 have been reared on apples freshly sprayed with lead arsenate, and we designated this material as the Virginia-K strain. By 1933 the Virginia-K strain was distinctly more successful in entering sprayed apples in comparative tests with the ordinary Virginia larvae. It is sufficient to say that continuous breeding of the moths from larvae reared on sprayed apples has now produced a strain that exhibits a greater degree of hardiness or resistance than the Colorado larvae in our possession during the early years of the investigations.

Furthermore, we have learned that larvae from old home orchards of the mountain regions—orchards which have never been sprayed—have codling moth larvae more easily controlled by lead arsenate than larvae taken from the commercial orchards. Repeated tests have shown that hardiness or resistance can be bred into the mountain codling moth by rearing the larvae on sprayed apples.

For thousands of years the codling moth has lived on the apple, but when opposed by man's poisonous offerings of lead arsenate this insect has demonstrated its capacity to survive. Apparently it is possible to breed a "better" codling moth population by eliminating the weaker ones through spraying. Thus the stronger or more hardy survivors can reproduce their kind and the level of "resistance" of the orchard population may rise.

FEBRUARY, 1943



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PAGE 18

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AMERICAN FRUIT GROWER

1943 ORCHARD PEST PROBLEMS

(Continued from page 6)

year.

The Oriental fruit moth is rather bad some years. We have found it unwise to have inner plantings of peaches and apples in the same orchard for a build-up of the Oriental fruit moth might occur on the young twigs of peaches and scatter causing considerable loss of the two-thirds grown apples.

OHIO

By J. S. HOUSER

Chief, Department of Entomology,
Ohio Agricultural Experiment Station

AT present there seems to be an adequate stock of insecticides on hand to meet the normal requirements for insect control on fruit crops.

There are no indications of pending outbreaks or unusual conditions as yet for the coming season.

Of the small-fruit insect problems, it is anticipated that some difficulty will be experienced with the raspberry fruit worm. This insect was destructive some years ago, particularly in plantings in northern Ohio. The last 2 years it has increased in abundance.

Some trouble is anticipated from the strawberry leaf roller in southwestern Ohio and from the strawberry leaf beetle in eastern Ohio.

With respect to peach pests, we have reason to believe that damage from plum curculio has increased within recent years and for that reason, the curculio spray advised in the spray bulletin should not be omitted. If the fruit set is light we advise that applications be made for both the petal-fall and shuck-fall sprays.

MICHIGAN

By RAY HUTSON

Head, Department of Entomology,
Michigan State College

MICHIGAN fruit pest problems in 1943 will be average. Codling moth, curculio, scale, peach borer, Oriental fruit moth, and those pests on which predictions are possible, did not go into the winter in excessive numbers. Apple maggot has been increasing for the past several years and 1942 was favorable for it, hence we have plenty of maggots going into the winter.

Growers report inability of repairmen to secure welding rods. This interferes greatly in repair of sprayers.

INDIANA

By J. J. DAVIS

Chief in Entomology, Purdue University Agricultural Experiment Station

THE four major fruit pests which will give us concern in 1943 are the codling moth, Oriental fruit moth, San Jose scale, and apple leafhoppers.

Codling moth:

In 1942 the codling moth started the season at a distinct disadvantage as the result of wet, cool weather, but infestations built up in late summer to a point comparable with 1941. At the present time, however, we would say the carry-over is not exceptionally heavy, but sufficient.

(Continued on page 20)

FEBRUARY, 1943

STATE NEWS

INDIANA—Conversations with growers at recent meetings reveal that in at least 90 per cent of the cases the growers had experienced no great difficulty in obtaining essential repair parts for sprayers and other orchard equipment.

Growers generally recognize the fact that they can expect increased difficulty in obtaining repair parts, particularly in greater delay as time moves along and, therefore, they are making an effort to put their machinery in shape during the winter season, hoping that by so doing they will eliminate much delay during the season when the sprayer or other equipment must operate.

It is difficult to estimate the number of sprayers that might be needed in this state in order to meet the minimum demands of the commercial growers. An estimate would indicate at least 25 to 30 new sprayers required.

Weather permitting, Indiana orchards should set a heavier crop of apples in 1943 than was produced in 1942. Normally, a pretty good peach crop would be expected in 1943 but with sub-zero temperatures in a number of areas in the state some little time will be required to determine the extent of damage to the peach crop.

Despite gas rationing the attendance by the growers at 14 different county meetings was greater than the attendance at meetings at these same points by the commercial growers a year ago. Indiana growers recognize the fact that they face increased responsibility and greater problems in connection with the production of the 1943 fruit crop and are out to do the job in fine shape.—MONROE McCOWN, Sec'y, Lafayette.

CONNECTICUT—With a few exceptions, Connecticut fruit growers have sufficient spray equipment to carry through the 1943 season. They realize that new equipment is very difficult to obtain because of the all-out war program and therefore are taking extremely good care of machinery now on the farm.

If 1943 were a normal season, commercial fruit growers in Connecticut would probably purchase at least 10 new power sprayers, 5 power dusters and 15 tractors. Most Connecticut growers are overhauling their spraying equipment and tractors now in order that they may order necessary repair parts. Those who are using the A-10, P-100 priority with their orders for repair parts have been fairly successful in obtaining deliveries.

It has been more difficult to obtain parts for old models than for more recent equipment. Connecticut fruit growers are trying to meet their labor and machinery shortages cheerfully, with a keen determination to produce a maximum fruit crop.—H. A. ROLLINS, Extension Horticulturist, Storrs.

MINNESOTA—The annual Horticultural Short Course given by the University of Minnesota will be held at University Farm, St. Paul on March 24, 25, 26.

Professor Alderman this month has announced the naming and introduction of three new fruits from the University of Minnesota Fruit Breeding Farm. Victory apple (formerly Minn. No. 396); Fireside apple (formerly Minn. No. 993); Burgundy strawberry (formerly Minn. No. 1192).—J. D. WINTER, Sec'y, Mound.

IOWA—The Iowa U. S. D. A. War Board states that the State of Iowa will be allowed ten power sprayers and three pumps for orchard and vegetable work. So far growers have had no trouble in getting repair parts for sprayers.—R. S. HERRICK, Sec'y-Treas., Des Moines.

FEBRUARY, 1943

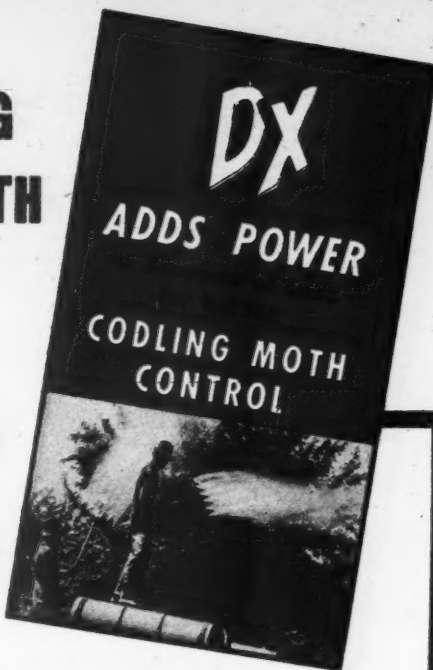
BEFORE PLANNING YOUR CODLING MOTH SCHEDULE

Get This Spray Program

AUTHORITIES agree that there is no substitute for arsenate of lead for codling moth control, but that it does need more power. D-X supplies this needed power.

Fruit growers in the most heavily infested areas have demonstrated time and again that the addition of D-X to the regular codling moth schedule reduces stings as well as entries to a lower minimum than was ever believed possible.

It is not necessary to upset your present spray schedule. Growers are getting maximum control by adding D-X Rotenone or D-X Nicotine to two



D-X
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CODLING MOTH
CONTROL

sprays for the first brood and two for the second. Where the use of Rotenone is restricted, D-X Nicotine may be used with equal if not greater effectiveness.

No fruit grower should plan his spray schedule for 1943 without getting his copy of Pratt's codling moth spray schedule. Write for your copy today.

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Only one thing keeps this scene from being a picture of your wife, your mother, your daughter. It is not a matter of time, for women still are working like this where the original photograph was taken. It is not a difference in land, for this European field is level, with soil much like that in many sections of this country.

The difference between this farm and yours is **POWER**. Where earth is turned by human muscle, much or most of the muscle is woman's. Where clumsy one-piece wooden plows prevail, travelers tell of the wife teamed with the ox to pull the plow. Wherever work is done the hard way, women and children have to help with it.

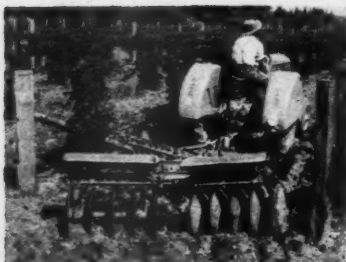
Every form of Power has brought its phase of freedom to the farm family. Waterwheels set woman free from grinding flour with mortar and pestle. Tread and sweep powers enabled animals to drive threshers, freed whole families from the flail. Steam power made possible the self-feeder and wind-stacker, did away with dirty drudgery in threshing. Finally came the tractor to lighten labor in field, at farmstead, and even on highway.

In the time it took to grow and harvest an acre of corn 25 years ago, a man now takes care of two acres. While he produced an acre of soybeans then, he produces over three acres now, with wheat nearly four acres, according to University of Illinois farm management records. In fruit-growing, Power and the machines to apply it have likewise multiplied manpower in tillage, spraying, and hauling. Future invention will extend the blessings of Power.

All the glorious advance of American agriculture by the application of Power is fruit of the freedoms which are the American way... freedom of thought, of education, of employment, of enterprise. And because the American way gave them Power and machines, one family on the farm now feeds three other families.

In time of peace those other people are free to provide plumbing and pianos, education and all the material blessings in our way of life. In time of war, farm machinery frees men to make weapons and to wield them in defense of all the freedoms of all the people. J. I. Case Co., Racine, Wis.

Tend Fruit Faster



Whether working in Youngberries, as this western grower is doing, in citrus or other tree crops, or in vineyards, the man who uses a Case orchard tractor gets along fast. Its eager power, wide speed range, and sure-footed traction hustle his implements along the row. Its quick, easy steering and its ability to take full load on short turns save precious seconds at every row-end. Four sizes of Case orchard tractors fit every fruit need.

CASE

SERVING AGRICULTURE *Since 1842* IN PEACE AND WAR

1943 ORCHARD PEST PROBLEMS

(Continued from page 18)

cient to demand a full complement of sprays in 1943.

Oriental fruit moth:

There was a notable build-up of the Oriental fruit moth in twigs and in apples, where there were no peaches, resulting in a large carry-over for 1943.

San Jose scale:

There was a notable increase in the San Jose scale during 1941 and in orchards where the dormant oil spray was used the winter of 1941-42, the infestation is much reduced, but certainly will bear watching. In orchards not sprayed the infestation is in most cases heavy.

ILLINOIS

By W. P. FLINT

Chief Entomologist, Illinois Natural History Survey & Agricultural Experiment Station

APPLE:

There are less codling moth larvae in hibernation at this time than at any period during the past five or six years. Sufficient numbers are present, however, to warrant careful attention to the insect in the spring, although with the normal rate of winter survival the numbers of larvae in the orchards in the spring of 1943 will probably not be one-half what they were in the spring of 1942.

Adult leafhoppers were abundant, and if the spring of 1943 is favorable, may cause moderate damage.

The fruit tree leaf roller is present in moderate to small numbers in western Illinois orchards. The status of the insect in 1943 will be about the same as that in 1942 with a possible slight increase in some areas.

San Jose scale:

The number of orchards moderately to severely infested is less than at the same date in 1942.

Peach:

The plum curculio showed a very definite increase in 1942. We would expect a very decided increase in curculio numbers in 1943.

Most growers have been able to obtain satisfactory repairs for their present sprayers, and have laid out their 1943 program with the idea of getting along with the equipment already on hand.

MISSOURI

By L. HASEMAN

Professor of Entomology, University of Missouri

CODLING moth:

There is a considerable carry-over of codling moth in most of our larger, older commercial orchards, as the past fall proved very favorable for late worms after the close of our regular 1942 spray schedule. This winter, however, we are urging a more strenuous than usual orchard sanitation program which we hope will materially reduce this carry-over.

Fruit tree leaf roller:

The fruit tree leaf roller has been definitely on the mend with us since last year and, while there is a considerable carry-over of egg packets in some of the east central and northeast Missouri orchards, we are expecting that with lead

(Continued on page 22)

PEACHES—1943

(Continued from page 10)

ing in." All past experience has been that the huge "fresh fruit" section of this, some 45 million bushels, cannot be used within the approximate 10-week peach marketing period by the 30 million American housewives, without the aid of concerted, heavy home-canning. We had heavy home-canning last Summer; did not, nationally, in 1941. Compare f.o.b. prices.

For instance, if every one of the 30 million housewives bought 3 lbs. of peaches for fresh eating every one of the 10 weeks of the normal marketing season, the total would be 18 million bushels—leaving something like 27 million bushels of the 45-million-bushel fresh-fruit crop to push the bottom out of the market. And we believe that this 3 lbs. for every family every week of the season is somewhere around saturation point for fresh eating, at present. Other uses, and big ones, are indicated. Home-canning is the proven one. It doesn't take many millions of housewives, buying one or two bushels each, to make the movement that insures prices with a profit. But we cannot take home-canning for granted, the coming season. Biggest push behind home-canning last Summer was the growing uneasiness about a food shortage:—bare pantries, hunger. Even so, home-canning of peaches would have been sporadic only, without the organizing of grocers to push peaches-for-canning to the housewife; unless U. S. Department of Agriculture's 2,500 home demonstration agents, the U.S.D.A.'s powerful publicity facilities, and other big helps, had been in there pitching; unless, in short, peaches had been hooked up closely with home-canning;—for to most of today's housewives, home-canning is a lost art.

The specter of bare pantry shelves is plainer today than it was last Summer. The urge to home-canning is still active. But it will require harnessing directly to our peaches, or it will be as sporadic and ineffective as it was in 1941, when f.o.b. prices went down to 60 cents a bushel. Grocers must be organized to present peaches for canning; and the housewife must be helped, through informational publicity, recipes and such urgings. Both merchant and housewife must be readied to receive and handle peaches when the huge volume hits the market. otherwise price disaster is a real probability. Last season, Nature spread the ripening period beautifully. She may not do it this season.

So it may be very costly not to be prepared;—when insurance can be purchased for so little. Organizing



TREE TANGLEFOOT

SAYS HALT TO ALL CLIMBING INSECTS

PROTECT Orchards and Vineyards

In this grim year of America-at-war nothing short of maximum yields will do. Make your contribution to the nation's food supply and safeguard your profits through banding your trees and vines with Tree Tanglefoot.

When a band of Tree Tanglefoot around the trunk of a fruit tree or vine says "HALT" it means that damage or crop destruction due to all climbing insects is absolutely prevented.

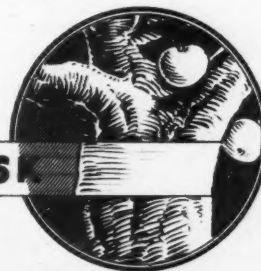
Growers and entomologists endorse and enthusiastically recommend Tree Tanglefoot. One application lasts for months. It is economical and easy to apply. Get genuine Tree Tanglefoot from your hardware or seed dealer and apply it now!

Genuine Tree Tanglefoot is by far the most effective means of combating cutworms, canker worms, hop flea beetles, tussock moth caterpillars, Fuller rose weevils and all other climbing insects.



THESE BANDS

REMOVE RISKS



For Victory — Buy War Bonds

THE TANGLEFOOT COMPANY • GRAND RAPIDS, MICHIGAN

DESTROY ALL ENEMIES OF AMERICA'S 1943 FOOD PRODUCTION

the grocers and Governmental agencies, food manufacturers and publicity, is a job that must be done on a national basis. Several states are doing splendid jobs within their own

area;—but there are 48 states.

A prime trouble this season will be in securing packages. For the present, W.P.B.'s planned abolition
(Continued on page 23)

HOW

your implement
dealer can help you
in this emergency



IN these days when maximum food production is so essential, new farm equipment so hard to get, and farm help a real problem, it's mighty important to take care of your tractor and farm equipment as never before.

The man to help you do this is your *implement dealer*. Have him check over your equipment regularly. From long experience and thorough familiarity he knows better than anyone else how to service and repair the farm machinery you bought from him.

John Deere dealers are in a particularly good position to help you with your John Deere equipment. Since long before Pearl Harbor, they have been adding new tools . . . modernizing their shops . . . improving their shop practices . . . providing new services. They are better equipped than ever before to give your tractor and equipment the kind of service that assures peak efficiency and performance throughout their long life.

GENUINE PARTS IMPORTANT

Your John Deere dealer sells you genuine John Deere repair parts—parts which are exact duplicates of those they replace, made to the same specifications, by the same workmen, on the same machines. John Deere repair parts fit and wear like the originals.

SEE YOUR DEERE DEALER

Make his store your headquarters for expert mechanical service and repair parts. Also see him about urgently needed new equipment. While he can't supply you with all the new machines you might want, he can perform a real service for you in conditioning your present equipment to meet the unparalleled demands of this national emergency.



STRAWBERRIES

PAY Allen's Berry Book describes best early, medium, late and overbearing varieties. Tells how to grow big, luscious berries for home and market. **COPY FREE** WRITE TODAY **W. F. ALLEN COMPANY** 22 Evergreen Ave., SALISBURY, MD.

1943 ORCHARD PEST PROBLEMS

(Continued from page 20)

arsenate added in the early pre-bloom sprays growers will be able to control leaf rollers satisfactorily.

Oriental fruit moth:

In our commercial peach orchards of southeast and south central Missouri, this pest has been stepping up its abundance and injury in spite of the growers' effort at checking it with four pre-ripening sulfur oil dust applications or nicotine-oil spray applications.

A number of Missouri growers are definitely in need of additional spray equipment. Many growers have been taking better care than usual of their equipment. The spray equipment men indicate they will have adequate repair parts for the 1943 season.

CALIFORNIA

By A. D. BORDEN

Associate Entomologist, California
Agricultural Experiment Station

WITH the demand for increased production of vital agricultural products in this war emergency there naturally is a much greater demand for insecticides, fungicides and other chemicals. Though such materials as rotenone and pyrethrum are practically not available and the amounts of materials containing copper and lead will be limited, California growers are very resourcefully meeting the situation by strict allocation of the available supplies where they are most needed and by adjustment of control practices so as to obtain the greatest benefit from curtailed programs.

Though some new sprayers and dusters are needed to cover the increased acreages of essential food products the greater problem is the lack of trained man-power to operate the equipment we now have.

WASHINGTON

By R. L. WEBSTER

Entomologist, State College of
Washington

MOST of the interest in pest control among our growers at present has to do with available supplies of insecticides. Because of a threatened shortage growers are wondering whether or not they may count upon a sufficient amount of lead arsenate for 1943.

War Production Board officials assure us that a supply of cryolite will be made available in case there is not enough lead arsenate.

Rosy aphids caused some loss to the Northwestern apple crop in 1942, especially on Romes.

The labor situation has been the most difficult one to combat and this is not likely to ease up at all during 1943.

OREGON

By DON C. MOTE

Entomologist, Oregon State College

GROWERS in Oregon appear to be more concerned about the labor shortage than spray machinery or materials shortage. Nut growers, and cherry and peach

(Continued on page 24)

LAST CALL!

Make sure of getting
your supply . . .

RUSH YOUR ORDER

for Standard's
Dormant Spray Oils!

Wartime uncertainties make it more important this year than ever to order spray supplies *early* . . . and to order spray oil of known quality and proved effectiveness.

To be sure of stopping the insects *before* they endanger your fruit trees and your profits, put your spraying equipment in shape and place your order **NOW . . . AT ONCE** . . . for Standard's ever-dependable dormant spray oils.

DENDROL DORMANT SPRAY OIL

Sixteen years of proved effectiveness in controlling scale, red mite, psylla, casebearers, etc. Its *high* killing power means *low* cost per tree.

STANDARD APHID SPRAY OIL

Developed primarily for complete control of aphids—also highly effective against scale, red mites, and other insects overwintering on fruit trees.

For Later Spraying . . .

NICO-SOL SUMMER SPRAY OIL

Nicotine-in-oil spray—efficient, economical—especially valuable in a labor-saving, non-wash program.

SUPERLA SUMMER SPRAY OIL

Ideal for use with arsenate of lead, fixed nicotine, and nicotine sulphate.

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Boyce Double Spray Gun

The Fan Shaped Spray Covers Better and Twice as Fast as a Single Nozzle Device



A Complete Line of Orchard Spray Accessories
Valves, Rods, Guns, Hose, Gauges, Couplings, etc.
SPRAYER SUPPLY MFG. CO., Grand Rapids, Mich.

PEACHES—1943

(Continued from page 21)

of wooden packages for fruits has been definitely shelved, on presentation of the facts by industry organizations and leaders. But that does not mean that you will get your packages as usual. Officials at Washington have estimated that about 70 percent of the normal supply will be available. Conceding that, growers will either: (1) use 30% fewer packages, or (2) 30% of the growers will get none. The statistics may not hold, but they paint the picture. What to do? Let me quote William G. Meal, Chief, Fruit and Vegetable Branch, A.M.A., Department of Agriculture:—

"The package situation is extremely tight and every practical conservation measure must be taken to insure an adequate supply of containers in 1943 and thereafter, during the emergency. It may become necessary to use substitute containers, and I believe growers should be prepared in their own self-interest to cooperate constructively in the development of suitable substitutes.

"Meanwhile, looking to 1943, growers and shippers can make a substantial contribution to a solution of the package situation by placing orders and accepting delivery of an appreciable portion of their new container requirements as early as possible. This will tend to relieve the pressure on manufacturers."

"What may be, and probably is, of greater importance, is the desirability of developing the greatest possible re-use of containers. In our opinion, particularly so far as the individual grower is concerned, this cannot be overdone and may spell the difference between having enough packages and being caught short at some critical time.

Packages, labor, repairs for machinery, control materials;—we only list the larger problems ahead this season. Labor is more a local than a national problem. Schools, part-time workers from nearby factories, volunteer help from adjacent towns, all these can be built into a big help—by organized local campaigning. Equipment:—less than one-fifth the normal number of new sprayers. Repairs:—plenty authorized for essential foods; you may get them if you start early enough. Control materials:—being held back from non-essential foods so that essential foods may have enough—if you can get them into your packing shed.

It all seems to add up to about this: as American citizens producing essential food for the Nation at War we have a bigger-than-usual job, and less than usual to do it with. Some will quit—just as some soldiers run away from battle. The others, thank



MORALE IS A LOT OF LITTLE THINGS

SURE! It only took you a couple of minutes to get the wash off the line for her. It wasn't very much. Of course, the day *was* cold and she *was* tired. But look at the sparkle in her eyes *now*.

Just a couple of minutes of thoughtfulness—a little show of consideration—gives anybody's "blue Monday" a rosy tint all around the edges!

And that's the way *morale* grows—a lot of little things which, added together make up the *big* things.

★ ★ ★

One of the little things many Americans enjoy is the right to a cool and relaxing glass of beer when the day's work is done. It doesn't have to be beer—it can be lemonade or buttermilk.

A small thing, surely—not of crucial importance to any of us. And yet—*morale* is a lot of little things like this. Little things that help to lift the spirits, keep up the courage, make us more tolerant and understanding of one another. Little things that are part and parcel of our American way of life.

And, after all, aren't they among the things we fight for?



heaven, will get up a little earlier; will work a little harder and a little later; will plan and think harder, and when "finis" is written on the 1943 deal, will be On Top: battlescarred

probably, but Americans:—who can look squarely in the eye the men who get back from Guadalcanal and North Africa. We have our marching orders!

Three Votes For Iron Age



Mr. Gordon Conchlin, Pomona, Rockland County, N.Y. and his two sons all vote for Iron Age. Their Iron Age Tractor-Trailer orchard sprayer has given them excellent service and they would not be without Iron Age. They have averaged 500 gallons of spray material per hour with one man spraying.

The Conchlin orchards have been owned and operated by members of the family for 225 years without interruption. Mr.

Conchlin's two sons represent the eighth generation to work the farm.

The experiences of such users as these are convincing proof of Iron Age versatility, sturdiness and adaptability. Your spraying will be done easily and dependably with Iron Age.

Until the war is won Iron Age can supply only a limited number of new sprayers. If you have a vital need for spraying equipment, see your ration board—and be sure to specify Iron Age.

Farguhar

PLANTERS
DIGGERS

IRON AGE

SPRAYERS
DUSTERS

A. B. FARQUHAR CO., Limited, YORK, PA.

THIS YEAR'S PEACH CROP IS WAR PRODUCTION

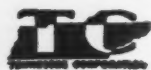
Let Tennessee Corporation help you protect it with:

Tennessee Triple Dust
Complete Dust for Peaches

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Zinc Sulphate
Protects apples and peaches against arsenical
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Ask your dealer

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No. 40 Tooth
Premier—One of many
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Get Atkins Pruning Saw
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NEW HARKING CHERRY
Immensely productive—hardy—quick bearing—thrives where Montmorency fails. Free catalog of newest fruits. **ANDREWS NURSERY**, Faribault, Minnesota.

MAKE MONEY with NEW SUNRISE red raspberry. Ten days earlier than Latham. Brings \$6.00 a case. Free catalog of new fruits. **ANDREWS NURSERY**, Faribault, Minnesota.

1943 ORCHARD PEST PROBLEMS

(Continued from page 22)

growers, however, may experience greater shortage in spray machinery.

FLORIDA

By J. R. WATSON

Head, Department of Entomology,
Florida Agricultural Stations

FROM the standpoint of insect control on citrus, the greatest problem our growers face is the shortage of labor, especially labor trained in spraying.

Insecticides citrus growers need chiefly; namely, oil emulsions for the control of scale insects and whitefly, sulfur for lime-sulfur and sulfur dust for the control of rust mites and nicotine for the control of aphids and thrips are plentiful or adequate. For our vegetable growers the most serious handicap is the shortage of pyrethrum and rotenone compounds. The situation as far as fertilizer is concerned, particularly inorganic fertilizer, is serious.

PENNSYLVANIA

By H. E. HODGKISS

Extension Entomologist
Pennsylvania State College

THE insect problems in our fruit plantings are chiefly the old species which occur in more or less numbers from year to year, but due to the fact that no sprays needed to be applied against these insects during their period of dormancy, some have started to increase and in many orchards have become particularly troublesome.

The insect conditions in our apple orchards are best stated on a sectional basis. In western and central Pennsylvania the apple maggot, European red mite and apple red bugs are the principal problems. Last year the rosy aphid was very severe and I expect we may have a hang-over from the apple aphids this year.

In the northcentral and northeastern counties codling moth, apple maggot and apple curculio are problems in individual orchards. The apple aphids, particularly rosy aphids, apple red bugs, plum curculio, red mite and European red mite are the principal section-wide problems.

In southeastern Pennsylvania we expect further attacks of the rosy aphids and other apple aphids, European red mite, plum curculio, codling moth, white apple leaf hopper, and various species of leaf rollers. The apple curculio, apple maggot, and Japanese beetle occur in a few orchards, but are not section-wide problems.

On peaches the chief problems are the peach borer, the plum curculio, Lecanium scale in some counties, and the Oriental fruit moth.

On cherries the black cherry aphid, cherry maggot, and plum curculio are problems each year.

On grapes, especially in the Chautauque-Erie County Grape Belt, the leaf hopper and grape berry moth are the outstanding insects at the present time with rather heavy infestations of rose chafers in some vineyards on gravel soil.

It is difficult to estimate the number of new power sprayers needed for adequate insect control. Some replacements, of course, should be made but under the present conditions farmers who are able to make replacements have in mind the difficulty of obtaining new machinery and I do not think there will be any orchard sprayers replaced. A few of the larger growers may, if they can, try out a newer type of machine.

ORCHARD SPRAYERS GO TO WAR

(Continued from page 7)

2. Apply to his county farm machinery rationing committee for any new machine which he must have for 1943 production.

3. Report shortages of repair parts, welding rod, and repair service to his county agricultural agent and the County War Board.

4. Overhaul and repair every machine in advance of the time of use to allow for delay in securing needed parts.

5. Arrange with a neighbor to exchange, borrow or rent a machine in the event of a breakdown.

6. Pay special attention to the correct adjustment, operation and lubrication of all machines to make them last for the duration.

7. Keep uppermost in mind those vital parts made from critical materials used in a sprayer such as stainless steel, brass, bronze, nickel, and rubber.

A sprayer is a machine which performs a difficult job. It has to handle many combinations of spray materials under extreme pressure. It has to contend with the abrasive action, foaming, mineral oil on rubber, rusting and scaling which all tend to keep a sprayer from performing efficiently.

If every fruit grower will give his sprayer more personal attention, we can materially reduce the need for new machines and repair parts. A grower must look ahead farther because equipment and supplies move to him slowly in wartime. Indicate your needs to the proper authorities in order that they may have definite information upon which to base their requests for the necessary materials and equipment for maximum food production in 1943.

FOOD
FROM OUT OF THIS WORLD
a famed feature at all
DEWITT OPERATED HOTELS

In Cleveland
HOTEL HOLLENDEN
In Columbus
NEIL HOUSE
In Lancaster, O.
THE LANCASTER
In Corning, N. Y.
THE BARON STEUBEN

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Over the Top in '43!



The hill ahead looks long and steep, a grueling climb for men and equipment. Pessimists say the old machinery will never make it, that there will be a slowdown in food production and closing-out sales all over the country. Are we going to be suckers for that kind of talk? Quitters, so near the top?

Food is turning out to be Uncle Sam's most powerful weapon, his ambassador of peace and good will all over the world. To hungry nations, it speaks louder than a thousand cannon.

Will our boys have to battle hunger too? Will our allies find America's cupboard bare . . . or a source of strength to join us in a mighty world-wide drive to Victory? That depends not so much on how old your equipment is as it does on you.

Worn bearings can be re-babbitted if necessary; old machines can be rebuilt to take the place of new ones. But you must act quickly. Line up your repair work ahead of time with your Allis-Chalmers dealer. Order needed repairs now! Enlist all your equipment in the Farm Commandos . . . Ready to Roll over the top in '43!

TO BETTER LIVING
TO BETTER FARMING
TO VICTORY

BUY WAR BONDS
AND STAMPS!
INSPECT
EQUIPMENT NOW!
TURN IN YOUR
SCRAP!

ALLIS-CHALMERS
TRACTOR DIVISION MILWAUKEE, U.S.A.

mail this COMMANDO-GRAM Allis Chalmers may be able to help you

Allis-Chalmers Mfg. Co., Dept. 16, Tractor Division, Milwaukee, Wisconsin
Can you help me locate the following equipment, no obligation to me:

I have the following equipment for sale to someone who needs it:

PLEASE PRINT SIZE AND DESCRIPTION—NAME AND ADDRESS

Name _____ R.F.D. _____

Town _____ County _____ State _____

SPRAYERS! Here
is the Only Way to Maintain
CLEAR VISION . . .

E-Z "C"

Face Protector with
Renewable Tear-Off Visor!

★ Don't let lime, lead and sulphur spray interfere with better crop coverage. Just pull out and tear off a strip of transparent ribbon for continuous CLEAR VISION.

Order from your seedman or hardware dealer—or write direct. \$3 complete.

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20

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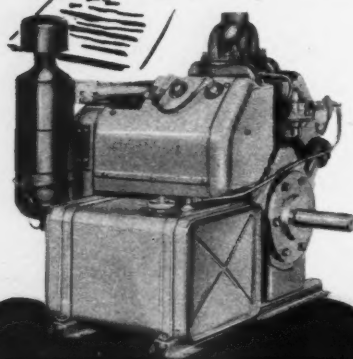
Borax or Boric Acid—for the effective control of BORON DEFICIENCY DISORDERS in apple orchards.

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"HOW Can I GET
a WISCONSIN
AIR-COOLED ENGINE?"



Almost every mail brings us this inquiry from power-wise fruit growers in all parts of the country: "How and where can I get a Wisconsin Air-Cooled Engine?"

These growers have a full realization of the tremendous value of air-cooled engine power in today's orchard operations. They know that this is one form of power that is always dependable, in any weather, in any place, to operate any kind of a machine within the engine's power ratings. They know that Wisconsin Air-Cooled Engines are of heavy-duty design and construction . . . built to take it, no matter how tough the going.

They know that Wisconsin Air-Cooled Engines provide complete freedom from water-cooling chores and hazards. There is no "boiling away" of water in hot weather, nothing to freeze in cold weather . . . no draining or re-filling.

They know that Wisconsin Air-Cooled Engines start quickly and easily at any time of the year . . . and operate satisfactorily at atmospheric temperatures up to 140°.

They know that these dependable engines supply the most power per pound of engine weight. The 22 hp. Model VE-4 engine (illustrated above) for example, weighs only 315 lbs., complete with side-mount fuel tank . . . less than 15 lbs. per horsepower.

But the question is: Where can you GET a Wisconsin Air-Cooled Engine today? Our answer is that for the time being (until Victory is won), apply to your local implement dealer for Wisconsin-powered equipment. Thirty leading manufacturers of farm machinery, including spraying and dusting equipment, garden tractors, etc., now use these fine engines as standard, built-in power on their machines. We will gladly send you their names and addresses.

Clip and mail the coupon:

WISCONSIN MOTOR CORP.
MILWAUKEE, WISCONSIN
Dept. AF-2.

- ☐ Send me list of farm machine manufacturers who equip their machines with Wisconsin Engines.

- ☐ Also send free illustrated literature.

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APS

A PAGE CONDUCTED IN THE
INTERESTS OF THE AMERICAN
POMOLOGICAL SOCIETY

A SUCCESSFUL CONVENTION

THE 58th Convention of the American Pomological Society held at Quincy, Ill., December 14-16, 1942, in joint session with the Illinois State Horticultural Society, brought out a good attendance in spite of travel difficulties. Interest in the crowded program was excellent throughout the meetings. Fruit growers and professional horticulturists were there from Illinois, Missouri, Michigan, Iowa, Indiana, Tennessee, Kentucky, West Virginia, South Carolina, and Washington, D. C.

So successful was this joint convention that Logan Colp, president of the Illinois society, raised the question for discussion as to whether it would not be desirable to hold similar joint sessions and regional fruit growers' meetings somewhere in the Middle West once in each three years. The opinion prevailed that such joint and regional conventions are stimulating and profitable. Doubtless an effort to organize similar meetings will result because of the general success of the Quincy meeting.

Local arrangements for the entertainment of visitors were made by C. C. Mast, secretary of the Illinois society. To him and his local committee on arrangements much credit is due for the success of the meeting.

The Allied Industries' Dinner program in charge of Prof. B. S. Pickett, vice-president, in charge of Pomological Organization, was a very informative session. Various members of the Allied Industries group discussed the supply side of fruit growing as it was being affected by the war. We were told that very little new equipment will be available to fruit growers in 1943. New sprayers will be almost non-existent as compared to the demand and these will be rationed. Adequate repair parts will be available. Fruit growers were urged to check over all spray machinery early and put it into first-class working condition. To wait until repairs are needed during the spraying season might prove very costly.

Insecticides will be sufficient to meet the needs of the industry, but there will be none to spare. Tractors of the orchard type will not be manufactured in 1943. The supply

of containers for fruits is going to be pretty largely determined by the labor situation. The National Apple Institute suggested that a nationwide plan be set up at once to salvage fruit and vegetable containers now in use in city markets.

The situation with regard to fertilizers needed for the production of essential fruits and vegetables was presented as critical. A resolution was drawn up and adopted which urged that the War Production Board release and make available needed fertilizers by early February, so as to avoid losses in production due to inadequate or inefficient application because of delay in the arrival of needed fertilizers.

The National Peach Council also co-operated in the meeting and supplied a part of the program. Carroll Miller, Martinsburg, W.Va., manager of the N.P.C., explained the need of a concerted effort on the part of peach growers to increase the consumption of peaches. Greatly increased supplies during the next decade are in the picture. With only a small budget the N.P.C. was remarkably successful in 1942 in its work of stimulating consumption through its contacts with various retail food distributors, nationally advertised food products, food editors of numerous metropolitan newspapers and the food editors of popular and widely-read magazines. The N.P.C. is also doing a great deal to bring to peach growers a realization of the job ahead which has to be done, if the peach industry is to avoid disastrously low prices due to increased production in the future.

President T. J. Talbert, Columbia, Mo., has taken the APS through two successful years, and he was re-elected as president for 1943. Also re-elected were H. C. C. Miles, Milford, Conn., treasurer; H. L. Lantz, Ames, Iowa, secretary; J. T. Bregger, associate secretary. The Board of Managers consists of Stanley Johnston, South Haven, Mich.; J. H. Gourley, Wooster, Ohio; and Meredith Reed, Vincennes, Ind.

Memberships are coming in right along . . . every paid-up member of the APS will receive a year's subscription to AMERICAN FRUIT GROWER and a copy of the Proceedings of the Quincy convention as soon as it is printed. Annual dues are only \$1.25 per year. Send remittances to H. L. Lantz, secretary, Ames, Iowa.

H. L. Lantz
SECRETARY

FREE! \$500 Full Size
FOOD & HOUSEHOLD
PRODUCT ASST.

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AMERICAN FRUIT GROWER

Package Bees and Queens

Three-Banded Italians

for quality and prompt service

2 lb. pkg. with Queen \$2.95

3 lb. pkg. with Queen \$3.80

Extra Queens @ \$3.90

We specialize in Queens. 20 years experience.

DUPUIS APIARIES, Andre Dupuis, Prop.

Breaux Bridge, La.

FEBRUARY, 1943



NATIONWIDE NEWS



(Continued from page 5)

cultural job to another as long as they continue to be necessary to the war effort.

Under the revised regulations local boards will be directed to classify in Class 2-C or Class 3-C all registrants who are considered on the farm under the new standards. In 2-C will be included essential farm workers without dependents and in 3-C essential workers with dependents.



SECRETARY of Agriculture Wickard, who recently directed that the entire production of citrus juices except canned grapefruit juice be reserved for direct war requirements, has now taken steps to provide processing plants with sufficient quantities of fresh citrus fruit to enable them to operate at capacity.

Under Food Distribution Order No. 6 the Secretary put into effect a program under which citrus fruit handlers in California, Florida, Texas, and Arizona may be required to set aside specified quantities of fruit for processing. The order covers lemons, grapefruit, limes, and all varieties of oranges except tangerines.

The quantities of each fruit to be set aside by handlers will be determined by the Director of Food Distribution on the basis of a percentage of fruit shipped by the handlers during specified periods. This "set aside" fruit may be sold at any time to a processor or any Government agency for processing, or may be processed into juice by the handler subject to existing orders relating to such processing.

To insure growers and handlers of a fair price for the fruit required to be set aside under this order, the Food Distribution Administration announced that it will stand ready to supervise the pricing of the fruit purchased by processors.



FRUIT growers are urged by the Containers Division of WPB to accumulate immediately a stockpile of second-hand wooden boxes, baskets, barrels and hampers for use in shipment of 1943 crops. At the same time, WPB appealed to retailers and other merchants to sell empty containers at nominal prices, either to second-hand dealers or to growers, rather than permit them to be destroyed.

By following this advice, growers, marketers and retailers will not only help relieve an expected heavy demand for new wooden containers, but will also ease the strain on man-power and transportation during the harvest season. Greater quantities of containers will be needed to market the larger

crops expected to result from agricultural production goals, and to supply products for our armed forces and the United Nations.



IN a message from ODT to all truck owners whose certificates of War Necessity do not provide sufficient mileage and fuel allotments for their necessary operations, the following procedure is suggested:

"First, estimate as carefully as you can what your additional requirements will be, and don't ask for more mileage and fuel than you actually need to carry on your operations efficiently.

"After you have estimated your additional requirements, proceed at once to request a change in your Certificate. If you wait too long to make this request, it may be impossible to correct your Certificate before the end of the period in which temporary transportation rations may be issued.

"This period ends January 31, but all requests for corrected Certificates should be in the hands of ODT before this. All requests . . . will be handled as promptly as possible. But the field force is limited. Last minute rush will mean inevitable delay."



A DETERMINATION by the Secretary of Agriculture of prevailing wages for planting, cultivating and harvesting war-essential vegetables, citrus fruits and sugar cane in five separate agricultural employment areas in Southeast Florida, embracing Dade, Broward, Palm Beach, Collier, Hendry, Martin, St. Lucie and Indian River Counties has been announced by the Department of Agriculture.

Growers are to pay workers obtained under the Government's farm labor transportation program the effective prevailing time or piece wages determined by the Secretary, with a minimum of 30 cents an hour. The U.S. Employment Service has certified that several thousand workers are needed in Southeast Florida to tend war-vital crops.



BATTERY-RUN radios, including a great many used on farms, should be operated on the basis of obtaining at the very most only a single set of replacement batteries a year, WPB announces. Pointing out that production of farm radio batteries has been cut due to restrictions on zinc and to other factors, WPB urges radio owners to follow simple conservation rules for assuring maximum service from their present supply. The

(Continued on page 29)

AMERICAN FRUIT GROWER

10 SOUND REASONS FOR USING



Bordeaux mixtures which effectively control fungous diseases depend on the elimination of guesswork and haphazard methods of determining the amount of Copper Sulfate in the spray mixture. Nichols Triangle Brand "Instant" Copper Sulfate gives you these 10 advantages:

1. **ACCURATE CONTROL** . . . You know exactly how much copper sulfate is in your mixture.
2. **GREATER SAFETY** . . . Control of mixture means increased safety.
3. **BETTER MIXTURES** . . . Dissolves instantly and completely.
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5. **EFFICIENCY** . . . 99% pure, 100% efficient.
6. **FASTER OPERATIONS** . . . Saves time, labor . . . mixes directly in the spray tank. Requires no agitation.
7. **REDUCES EXTRA HANDLING** . . . Eliminates extra equipment necessary for making stock solutions.
8. **KNOWN QUALITY** . . . Standard for 50 years, it is the oldest and best known brand. Modern manufacturing methods assure never failing high quality in every package.
9. **MODERN PACKAGES** . . . Special packages safeguard quality. At no extra cost you receive the best in modern packaging.
10. **PRODUCED IN 3 LARGE PLANTS** . . . Your dealer can always supply you because of three strategically located plants.

ASK YOUR DEALER for Nichols Triangle Brand "Instant" Copper Sulfate today. He also carries LARGE AND SMALL CRYSTAL and SUPER-FINE NICHOLS COPPER SULFATE for STANDARD BORDEAUX, and MONOHYDRATED for copper lime dusts.

NEW ROGERS McINTOSH
The Apple of Tomorrow.
"A Solid Red Mac"

NOW AT REGULAR PRICES
Better Quality than Common Mac. Hangs better on Tree; Fruits Early; Very Tender and Juicy.

Plant Maloney's selected, hardy, super strains of APPLE, PEACH, PEAR, PLUM, CHERRY, BERRIES, SHRUBS, ROSES and SEEDS. Write for large FREE COLORED CATALOG (largest ever). Our Northern Grown trees are ready to start quickly, and are reasonably priced. This is our 50th Year and Satisfaction is Guaranteed.

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EXTRA PROFITS in HYBRIDS
AMERICAN WHITE customers report quicker growth, greater livability. **MONIE BROS.** a successful hybrid, concentrated pedigree strains. 100,000 per acre. Check weekly. Free list. Send Free. **WILL TODAY!**
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Single from \$3.30
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By T. J. Talbert and A. E. Murneck. The newest practices and established fundamentals of orchard and small fruit culture are covered in the 345 pages comprising this volume. Fruit growing as an occupation, new fruit introductions, propagation, sites and soils, irrigation and drainage, soil management, insects and diseases, spraying and dusting, harvesting and grading, and marketing are discussed. Chapters are included on individual fruits and nuts. 112 illustrations add to the interest and value of the book. Sent postpaid on receipt of \$3.75.

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COLONIAL CHICKS. WORLD'S LARGEST PRODUCTION means lowest prices. Leading breeds. Catalog Free. COLONIAL POULTRY FARMS, Pleasant Hill, Mo. Marion, Ohio.

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67 RARE VARIETIES BABY CHICKS, EGGS, BREEDING Stock. Ducks, Geese, Turkeys, Guinea, Chickens, Bantams. Free handsome catalogue, colored pictures, showing Lakenvellers; Polish; Hamburgs; Andalusians; Sussex; Giants; Cornish; Houdans; Minorcas; eleven beautiful varieties Wyandottes and Rocks; Australorps; Spanish; Buttercups; Langshans; Anconas; Orpingtons; Rhode Islands; New Hampshire; Brahmas; Lamona; Turkeys; 10 varieties Hybrids. MURRAY McMURRAY HATCHERY, Box 24, Webster City, Iowa.

TRIPLE GUARANTEED LARGE WHITE LEGHORNS. Hanson's 300-egg foundation stock. Approved AAA Pullets \$13.95; nonsexed \$7.95; cockerels \$3.95. Postpaid. Catalog. ORTNER FARMS, Clinton, Missouri.

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JERSEY GIANTS

BEFORE ORDERING CHICKS, WRITE FOR LITERATURE. THOMAS FARMS HATCHERY, Pleasanton, Kansas.

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BEES—GOOD SIDE LINE, PLEASURE, PROFIT. Send \$1.00 for book, "First Lessons in Beekeeping" (new edition), and one year's subscription. Free Literature. AMERICAN BEE JOURNAL, Box G, Hamilton, Illinois.

BEEES

PACKAGE BEES FOR POLLINATION. 2 LB. PACKAGE and Queen, \$2.85; 3 lb. \$3.75. P.O.B. Winnfield, RAPIDES APRIARIES, Winnfield, Louisiana.

FOR SALE

BECAUSE OF BROKEN HEALTH AM OFFERING MY 44 acres bearing apple orchards at fraction of cost. HERBERT COOPER, Ionia, Mich.

FOR SALE BEAN SPRAYER, 4 HORSE ENGINE, Triplex pump. SMITH, Otoe, Nebraska.

OFFSET, CLARK CUTAWAY ORCHARD ROW DISC. Cheap. E. O. WORTH, Mondamin, Iowa.

NURSERY STOCK

PROLONG THE LIFE OF YOUR NEW ORCHARD 15 years by planting our Super-Hardy northern-rooted fruit trees. Can also supply Hibernia and Virginia for top-working. Free catalog. ANDREWS NURSERY, Fairbault, Minnesota.

MAKE MONEY GROWING FRUIT QUICKLY. QUICK crops, big profits from small space. Best Varieties Strawberries, Raspberries, Blackberries, Asparagus, Rhubarb, Grapes, Tree Fruits, Roses, Shrubs, Flowers. NEW Thornless Boysenberries, Blueberries, Seedless Pear. Discounts for early orders. 54th year. Catalog FREE—write today! O. A. D. BALDWIN NURSERY, Box 150, Bridgman, Michigan.

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STRAWBERRY PLANTS FOR SALE. McUMBER'S strain, Blakenores also Tennessee Shipper and Knovoy. State inspected and certified. Write for prices. R. R. McUMBER, Greenfield, Tennessee.

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STRAWBERRY PLANTS 75¢—100 UP. THORNLESS Boysenberries. 10 Giant Strawberries \$2.25. Tree Strawberries. White Blackberries. Black Yellow and Red Raspberries. Blackberries. Fruit Trees. Grape Plants. Asparagus. Shade Trees 20¢ up. Hardy Shrubs. 100 Hedge Plants \$1.50. Everblooming Roses. Evergreens. Perennials. Giant Glads. Mammoth Dahlias. Garden Seeds. Big Discounts for Early Orders. CATALOG FREE. ZILKE NURSERIES, Baroda, Michigan.

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CHICK-RAISERS PROFIT BY READING AMERICA'S leading poultry magazine. Newest ideas on brooding, feeding, disease control, marketing. One year 25¢; five years \$1. POULTRY TRIBUNE, Dept. 17, Mount Morris, Illinois.

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SONGWRITERS. WRITE FOR FREE BOOKLET. Profit Sharing Plan. ALLIED MUSIC, Dept. 58, 204 East Fourth, Cincinnati, Ohio.

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EARLY BIRD TREE BANDS CHEMICALLY TREATED. Low in price, high in quality. Send orders early. EDWIN H. HOUSE, Saugatuck, Michigan.

TREE BANDS—CHEMICALLY TREATED. ORDER yours early this year to insure delivery in time. Write for prices. M. A. KOELLER, Barry, Illinois.

TREE TREATMENT

CONTROL CORK, CHLOROSIS AND OTHER DISEASES the Internal Way, new and effective. 35¢ treatment. Side line salesmen made \$100.00 monthly. Agents wanted, write, HOLISTER TREE SERVICE, INC., Cowen, West Virginia.

TURKEYS

QUALITY POULTS. 5 VARIETIES. BLOODTESTED. Broad Breasted. Exclusive turkey hatchery. WOLFORDS TURKEYS, B8, Spencerville, Ohio.

WANTED

WANTED SPRAYERS, CLEANER, EQUIPMENT. Orchard supplies. Give age, condition. COREY ORCHARDS, Clay County, Cory, Indiana.

WANTED ORIGINAL SONG POEMS. FIVE STAR MUSIC MASTERS, 716 Beacon Building, Boston, Mass.

WANTED: APPLE CRATES, NEW OR USED, IN good condition. 5,000 or more. STEUK FRUIT FARM, Venice, Ohio.

WANTED: LESSOR, BUYER OR MANAGER FOR A 25-acre apple orchard. Some peaches, very productive. Good storage house and equipment. Located near Salem, Ohio. Address: E. U. WHITACRE, 4468 Perkins Ave., Cleveland, Ohio.

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SENSATIONAL NEW

Strawberry

Just Released by Originator

Kasuga's "20th Century"

Revolutionary everbearer, yields 1,000 cases 1st yr.—3000 second. Brought \$2.50 case L.A. market, premium on all markets. Prolific plant maker, good shipper, high quality and flavor. Winner wherever entered. Tested by government, state for market, freezing, preserving, canning.

Before buying write for details

20th Century Berry Farms

R. D. 1, Box 428, Sandy, Utah

NATIONWIDE NEWS

(Continued from page 27)

rules include:

1. Don't waste your batteries.
2. Avoid long, continuous radio operation.
3. Keep batteries away from heat.
4. Have the tubes checked regularly.
5. Disconnect batteries from radio when not in operation.

More than half of the zinc allocated for civilian batteries is now used for production of farm radio batteries, but until military requirements are fully met, there is little possibility of any additional allocations.



ODT has postponed the final date for initial commercial motor vehicle and truck tire inspections from January 15 to February 28, 1943. After the initial inspection is made, the vehicle must then be presented for regular inspections every 60 days or every 5,000 miles, whichever occurs first. All inspections must be made by inspectors designated for this service by OPA.

If the tire inspector finds the vehicle's tires in good condition he endorses the Certificate of War Necessity. Certificates which do not have this valid endorsement cannot be used to obtain gasoline ration coupons from local War Price and Rationing boards.



A LIBERALIZATION of some of the conservation and limitation orders affecting production and distribution of lumber is forecast by Arthur T. Upson, Director, Lumber and Lumber Products Division of the War Production Board. Lumber regulations will be modified so that stocks at mills and in wholesale and retail lumber yards may be replenished to offset the heavy drain of the past year on reserve supplies.



AGRICULTURE Secretary Wickard will have final word on how much machinery is necessary for farm program. Following a tug-of-war between Wickard and WPB over materials for farm equipment manufacture, the latter organization agreed that Wickard was the one to say how much for farm use.



FOOD Administrator Claude R. Wickard has signed an order directing the Office of Price Administration to ration jellies, jams, preserves, and fruit butters. No specific time was set for the rationing order to become effective, but officials have said it would be impossible to begin before March.

Elgetol DORMANT SPRAY

The WATER SOLUBLE Dinitro Dormant Spray

Elgetol Controls

APHIS

BUD MOTH

TWIG BORER

CROWN GALL

OYSTER SHELL

SCALE

and other pests

Elgetol controls aphid, bud moth, twig borer, crown gall, oyster shell scale and other pests. It combines ovicidal, insecticidal and fungicidal action and has the endorsement of Agricultural Colleges and Experiment Stations.

Elgetol has proven its value through many years of successful use by leading growers. It is safe, effective and easy to use.

Investigate the possibilities of Elgetol today. Your dealer has ample stocks and interesting literature.



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Sensible Rates—Restricted Clientele

- 18 Hole Championship Golf Course
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- Outdoor Swimming Pool
- Best Fresh Water Fishing
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- 125 Rooms. Modern Building
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Write for folder and rates—ANGUS McDONALD, Manager

HIGH-PRESSURE SPRAY HOSE

3 Braid — Any Length — Any Pressure to 1000 lbs.
Sizes— $\frac{3}{8}$ " - $\frac{7}{16}$ " - $\frac{1}{2}$ " - $\frac{5}{8}$ "

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 $\frac{3}{8}$ " - $\frac{7}{16}$ " - $\frac{1}{2}$ " and $\frac{5}{8}$ " High Pressure Couplings
PROMPT SERVICE — LOW PRICES
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Falls Tree, Cuts Log
Uses Power Take-off
any tractor. Direct drive.
Long stroke. Saws fast.

Easy on fuel. Hundreds of satisfied users. Big labor saver. Low Price.
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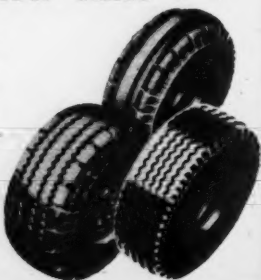
"THE LONGEST WEARING TRACTOR TIRE ACTUALLY COSTS YOU THE LEAST"

Says **Mr. EXTRA TRACTION**



BUY RETREADS AS CAREFULLY AS YOU DO NEW TIRES ★ ★

When your automobile, truck or front tractor tires are worn smooth, have them retreaded by the Firestone Factory-Controlled method and get the longest-wearing retreads that money can buy.



THIS year tractor tires will be pulling heavier loads and working longer hours than ever before. If your tractor tires have the patented Firestone Ground Grip Tread, they will not slip or spin and waste precious rubber before it has done a job for you. That's why the longest-wearing tire — the Ground Grip — actually costs you less. Let your nearby Firestone Dealer or Store help you obtain a ration certificate and also ask him for the latest Firestone booklet on how to make any tractor tire last longer.

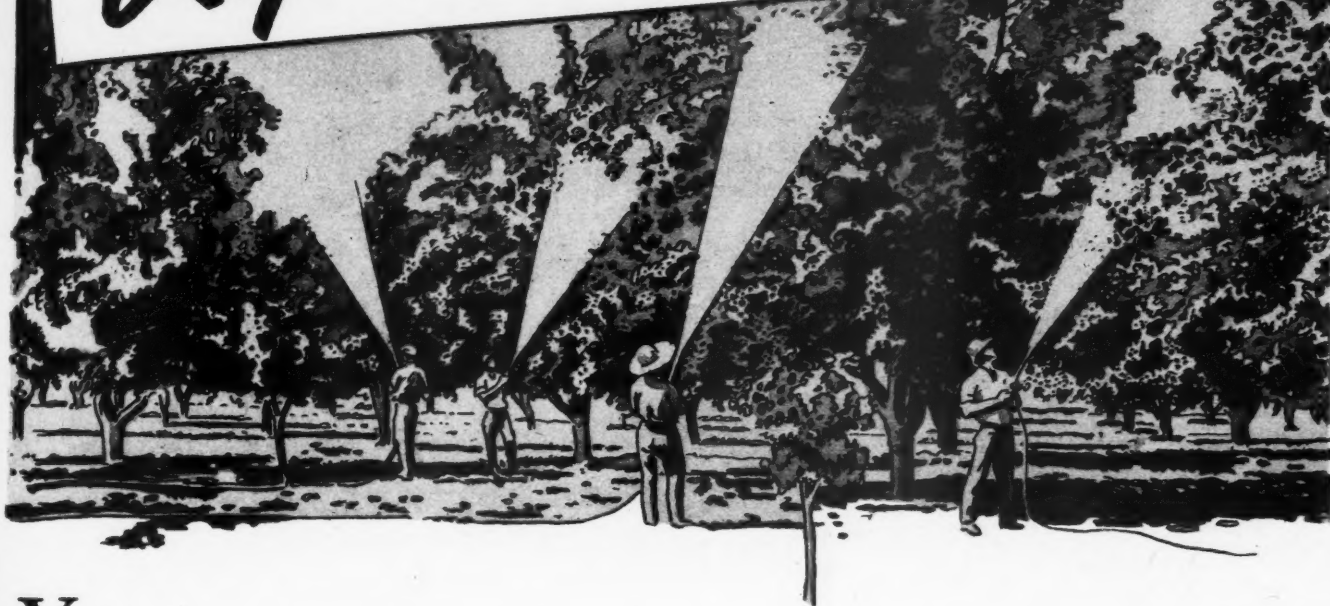
- ★ Up to 215 EXTRA Inches of Traction Bar Length Per Tractor Puts Less Strain on Each Bar.
- ★ Triple-Braced Traction Bars Can't Wobble and Waste Rubber.
- ★ Unbroken Traction Bars Reinforce the Tire Body — Prevent it From Breaking in the Center.
- ★ EXTRA Traction Bar Length Gives Greater Traction — Does More Work on Less Fuel.
- ★ Continuous Traction Bars Clean Better — No Exposed Ends in Center to Collect Trash and Mud.

Firestone

GROUND GRIP TIRES

WHY WE WANT TO SELL
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Repair Parts
THIS YEAR



YOUR part in the victory effort is to produce food—to do it in spite of handicaps. The boys on the battlefronts don't always have all the weapons, ammunition they could use. But they keep on attacking. They often lack tools and materials, but somehow they service battered planes and tanks and put them back into the fight.

You give valuable help to the war effort when you repair and carry on with old



equipment. Any Hardie, regardless of year or model, properly serviced will give new sprayer performance. All necessary parts, even complete pumps, new improved guns, hose, cups, etc., are available to replace those worn out. New Hardies

can be obtained only through your local rationing board. If you get one you'll find it the same dependable Hardie as always. For service, for information, for help ask any Hardie dealer or write or wire us.

THE HARDIE MFG. COMPANY

Hudson, Mich.

Portland, Oregon Los Angeles, Calif.

THE ONLY SPRAY PUMP THAT IS *Completely Lubricated*

HARDIE

DEPENDABLE SPRAYERS

FOR THE FOOD FRONT—MORE FRUIT!



Favored for the Big Job of Insect Control

D.N. Dry Mix (WETTABLE)



D.N. Dry Mix (wettable), highly favored for spraying in the dormant period, lends

itself readily to a variety of conditions found in fruit orchards. It can be used in water alone or in combinations with oil emulsion, miscible oil or emulsible oil. Use it with water alone to control aphids on apples and cherries; add it to oil to control scale, pear psylla and bud moth.

With *D.N. Dry Mix* less oil is required for the completed spray. This Dow product activates oil, increasing the toxic effect on certain scale insects.

D.N. Dry Mix is easily handled. Its use permits variations in the amounts of the material and the oil when controlling one pest or a combination of pests. Spraying should



be completed by the time green leaf tips are visible in blossom ends. Apply at a time when spray will dry quickly and do not spray if temperature is below 40° F.

AN EQUALLY FAVORED DORMANT SPRAY

Dowspray Dormant, an equally potent spraying material, contains the toxicant dissolved in oil and is ready for addition to water in the spraying tank. A special emulsifier is furnished.

Dowspray Dormant is particularly effective against aphids. Apply in the dormant period while aphids are in the egg stage. For pear psylla apply it in the late dormant period.

FOR THAT RED MITE BUILD-UP

Dow offers a new and especially effective control for red mite—*D.N. 111*. It stops that summer build-up. Make note of it now.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN
New York St. Louis Chicago

Insecticides



CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY